NEW REMEDIES.

AN ILLUSTRATED MONTHLY TRADE JOURNAL OF

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS

VOL. XI., NO. 7. WHOLE NO. 97.

FRED'K A. CASTLE, M.D., - - EDITOR.
CHARLES RICE, PH.D., - ASSOCIATE EDITOR.

PUBLISHED BY

WILLIAM WOOD & CO., 56 & 58 Lafayette Place, N. Y.

JULY, 1882.

SUBSCRIPTION PRICE, per year, - - - - - $2.00
SINGLE COPIES, - - - - - - - - - - .20

Address all communications relating to the **business** of NEW REMEDIES, such as subscriptions, advertisements, change of Post-Office address, etc., to WILLIAM WOOD & Co., 56 and 58 Lafayette Place, New York City, to whose order all postal money orders and checks should be made payable. Communications intended for the **Editor** should be addressed to THE EDITOR OF NEW REMEDIES, in care of William Wood & Co., 56 and 58 Lafayette Place, New York City.

NEW REMEDIES is issued the 25th of each month, dated for the month ahead. Changes of advertisements should reach us before the 10th. New advertisements can occasionally be inserted after the 18th.

REGULAR ADVERTISEMENTS according to size, location and time. Special rates on application.

ELECTROTYPES of the illustrations contained in NEW REMEDIES will be furnished for 50c. per square inch.

EDITORIAL.

Rebate Sales.

THE proposal of wholesale dealers and manufacturers of proprietary articles to adopt the rebate system in the sale of these wares, appears to meet with considerable favor, but as yet the advocacy of the plan appears to have come mainly from those who handle the goods in quantity, rather than from retail dealers, and we doubt the success of the project, for the reason that any action which attends to increase the price which the latter will be obliged to pay for such goods will lead to a corresponding reduction of sales. It is not infrequently the case that, with a view to attracting custom in places where competition is active, proprietary articles, purchased at a considerable discount, are sold at a small profit or without any profit. In the case of the wholesale dealer it becomes necessary that he should dispense with any advantage to be gained from the sale of large quantities at a low rate of profit, since this would prevent his receiving the rebate provided for in the contract. In fact, the intention is to substitute an arbitrary contract for the natural customs of trade; relying upon a popular demand to compel dealers to keep proprietary articles in stock, and ignoring the benefit to be derived from any personal effort on the part of the retail dealer to create a market for the goods. In other words, the project attempts to establish the principles of trade-unionism in the place of commercial custom.

An Apothecary's Responsibility.

AN important case has lately been tried in this neighborhood in which a suit for $10,000 damages was brought against a pharmacist under the following circumstances: A woman entered the store of Mr. Henry Deidel and presented a prescription for a considerable amount of laudanum. On the prescription was a request from the prescriber that the bearer be given sixty drops in the store. This Mr. Deidel declined to do, but at the solicitation of the woman, who was in pain, that he would give her such a dose as he would personally be willing to administer to her, she was given ten drops. In the suit it was claimed that if Mr. D. had complied with the request of the physician, she would have escaped a miscarriage and its effects. In defense it was claimed that a druggist is under no obligation to personally administer dangerous drugs upon the order of a physician, his duty being only to prepare medicines according to a physician's directions. Judge Beach, of the Court of Common Pleas, before whom the case was tried, indorsed this latter view of a druggist's responsibility, saying that such a tradesman would be liable to indictment for manslaughter for having knowingly administered a drug or medicine which produced death. The majority of the physicians who testified said that the sixty drops of laudanum, had they been administered, would not necessarily have prevented the miscarriage. The verdict of the jury was for the defendant.

Lactic Acid.

OUR attention has been called by a wholesale house of this city to the confusion which reigns among many dealers and consumers regarding the proper strength of the acid to be sold or to be dispensed when merely "lactic acid" is directed.

Heretofore, lactic acid has not been officinal in the U. S. Pharm., though it has been so in the German and French Pharmacopœias. It will, however, be officinal in the forthcoming new U. S. Pharm. The German Pharm. recognizes only the strong acid, containing about seventy-five per cent of absolute lactic acid. The French Pharm. recognizes two kinds, one less pure, and intended for preparing lactates; the other, the purer acid.

There is no warrant whatever to sell or dispense a "ten per cent" lactic acid, or a "diluted lactic acid," when "lactic acid" is demanded. The use of a dilute acid should be at once abandoned.

The Greek Pharmacopœia.

OUR friend, Prof. Xav. Landerer, of Athens, informs us that a Commission has recently been appointed by the Government for the purpose of elaborating a new Greek Pharmacopœia. Whether the Commission will accomplish anything, or within what time the work may appear, is, for the present, uncertain.

The first official Greek Pharmacopœia appeared in 1837. It was edited by Joh. Bouros, Xav. Landerer, and Jos. Sartorios. In 1868, the work was reprinted, with an appendix by Prof. Landerer, describing the more recent remedies, and containing an etymological index of names of botanical, zoological, and mineral pharmacopœial substances, and a list of antidotes. This work is still in common use throughout Greece and Asia Minor; also in Constantinople to some extent, although in Turkey, Dorvault's L'Officine is usually consulted.

Correction.

IN the article by Mr. D. C. Moriarta, entitled "On the Pancreatins of the Market," published in our May number (p. 133), the following corrections should be made:

Page 134, line 31, read: No. 3, American, 100 grains to pint of milk, etc.

Page 134, foot-note, read: 1 gram of starch, etc.

[ORIGINAL COMMUNICATION.]

The Pharmacopœia.*

BY S. A. D. SHEPPARD.

WE are all looking forward with much interest to our new Pharmacopœia—the United States Pharmacopœia of 1880.

We are asking when will it comeout? How it will be an improvement on the one now in use? and many other similar questions.

At a meeting of an association of this sort it may be interesting and profitable to review briefly the history of the United States Pharmacopœia, to learn how and by whom it has been and now is compiled; what interests we, as pharmacists, have in it, and how does this book effect our chosen life work. Does it elevate it or otherwise? What duties have we in regard to it?

Previous to 1808, the physicians and pharmacists of the United States had no American authority to consult as a guide in manufacturing pharmaceutical preparations.

The London and Edinburgh Pharmacopœias and Edinburgh New Dispensatory were the most commonly used standards, but it must be said that, in this matter, affairs in America were in a state of general confusion.

This condition of things was a source of anxiety to some of the foremost and best educated physicians of those days, but we do not learn that the apothecaries gave themselves any trouble about it. As a class, the apothecaries were not so well educated as are the apothecaries at present, and might have been quite properly classed as physicians' assistants.

These leading physicians began to realize that the people of the United States had grown to be a great nation, great and strong enough to go alone in this direction as well as in regulating their own form of government, and not to longer rely on the mother country for guidance as to how laudanum, paregoric, tincture of rhubarb, etc., should be made.

The members of the Massachusetts Medical Society were the first to put in practice this idea of independence, and in 1808 the society published the first pharmacopœia that was ever published on American soil. It was a good book and worthy of the old "Bay State." The framers desired most earnestly that it should be compiled as a national pharmacopœia, but public opinion on this point had not sufficiently ripened, and the book was published as a local work.

Dr. James Thacher, of Plymouth, published a dispensatory as a commentary on this Massachusetts Pharmacopœia, and the dispensatory was popular enough to pass through four editions published in 1810, '13, '17, and '21.

In 1817, a pharmacopœia of the New York Hospital appeared, and in the same year, Dr. Lyman Spaulding submitted to the New York County Medical Society a project for the formation of a national pharmacopœia.

This plan was as follows:—the United States to be divided into four districts, northern, middle, southern and western; the New England States to form the northern district. New York, New Jersey, Pennsylvania, Maryland and the District of Columbia the middle district, and the States south and west of these borders to constitute the other two districts.

This plan proposed that a convention should be called in each of these districts, to be composed of delegates from all the medical societies and schools. There were no pharmaceutical societies or schools in those days. It was proposed, that each convention form a pharmacopœia and appoint delegates to a national convention to which the four district pharmacopœias should be taken and from these should be compiled a national pharmacopœia.

Dr. Spaulding's plan was very generally approved by the medical societies throughout the country and was fully carried out in the northern and middle districts, where pharmacopœias were compiled and delegates appointed to meet in a national convention at Washington, D. C., January 1st, 1820. The convention met as arranged for. The western district does not appear to have been represented. Some of the medical societies in the southern district sent delegates so that the convention was fairly representative of the medical fraternity of three districts of the country.

The United States Pharmacopœia of 1820, our first national standard, was the result of the deliberations of this convention and the labor of its committee. It was published in Boston, Dec. 15th, 1820, in both the Latin and English languages, the Latin on the left-hand page and the English translation on the right-hand page.

Though far from being perfect, yet this pharmacopœia seemed to have been very generally satisfactory to the people of those days. Dr. Jacob Bigelow, of Boston, one of the publication committee, wrote a commentary on it which was published in 1822. This commentary was styled "Bigelow's Sequel."

Before adjourning, the convention of 1820 made arrangements for the future revision of its work. It instructed its President to issue, January 1st, 1828, writs of election to the various incorporated State medical societies and schools, requiring them to ballot for delegates to a convention to be held at Washington, D. C., January 1st, 1830, three delegates from each of the four districts; the convention thus was to consist of twelve delegates.

Notwithstanding the care thus exercised by the convention of 1820 to arrange for a convention in 1830, a serious misunderstanding occurred, the result of which was, that two rival pharmacopœias were published in 1830, one in New York and one in Philadelphia.

The properly appointed delegates met Jan. 1st, 1830, but did not meet in the right place, preferring, as a matter of convenience, to meet in New York, instead of incurring the extra expense of a journey to Washington, they were so few in number that they adjourn for six months, in order to get assistance from the medical fraternity of the country.

They then met again, revised the pharmacopœia of 1820, authorized the publication of their revision, and before adjourning provided for a subsequent revision, five years later, in 1835.

Another set of delegates who considered their own credentials satisfactory met at Washington, but did not meet on the day appointed, for they met Jan. 4th, 1830, instead of Jan. 1st, 1830.

These delegates recruited their number to thirteen by inviting any member of congress, who was a regular physician, to join them. They then proceeded to appoint a publication committee with elastic powers. Two of the three members of this publication committee were Dr. Geo. B. Wood and Dr. Franklin Bache, afterwards so widely known by their famous and valuble work, the "Wood and Bache Dispensatory." These gentlemen were then professors in the Philadelphia College of Pharmacy. Though irregular in its formation and the time of its meeting, the Washington convention of 1830 and its publication committee seem to have done their work thoroughly and carefully.

Among other things, the publication committee, in the exercise of its powers, submitted the manuscript to the Philadelphia College of Pharmacy, then shortly founded, for its approval. The enthusiastic members of the young college appreciated the honor thus done them, and appear to have made some good suggestions, and the book thus sent out from Philadelphia became the real pharmacopœial authority of the country, although the New York book, no doubt, had the best right to be styled the lineal descendant of the pharmacopœia of 1820.

This result was brought about by the superior character of the Philadelphia book, and the subsequent production and publication by Drs. Wood and Bache, in Jan., 1833, of their U. S. Dispensatary which was, of course, a commentary on their own, that is the Philadelphia Pharmacopœia, the New York Pharmacopœia being quite ignored. This dispensatory, immediately, from its intrinsic value and general usefulness, took the place in every drug store. It has now passed through fourteen editions, and is today a popular and valuable book. The claims of the rival Pharmacopœias were loudly asserted by the medical and

* Read at the recent meeting of the Massachusetts State Pharmaceutical Association.

pharmaceutical writers of the two sections, but, as we now look back on the controversy, we cannot avoid the impression that a lurking jealousy between the cities of New York and Philadelphia had something to do with the misunderstanding.

Any one who is interested in this matter will find in the *American Journal of Pharmacy*, the organ of the Philadelphia College of Pharmacy, vol. ii., p. 316, a severe and lengthy criticism of the New York book, and in vol. iii., p. 64, a most hearty commendation of the Philadelphia book, and *vice versa*, in the preface of the ninth edition of Cox's American Dispensatory, a story of the opposite sort—the New York book being considered as the correct thing.

At the convention in New York arrangements were made to have a revision of the Pharmacopœia in five years, *i. e.*, in 1835, it being considered that ten years was too long a time between the revisions, but we do not learn that the plan and arrangements of the New York convention were ever carried into effect. They seem to have been simply ignored by all, and the plan of the Washington convention for the revision in 1840 to have been more feasible and correct.

We therefore find that on the first Monday in January, 1840, a convention was held in Washington for revising the Philadelphia Pharmacopœia of 1830. In the calling of this convention, the plan hitherto adopted for dividing the country into districts was changed, and we find the convention to have been a meeting of the delegates from all the various incorporated medical colleges and incorporated colleges of physicians in the United States. The convention, by vote, invited the Surgeon-General of the Army and the Senior Naval Surgeon at Washington to participate in the proceedings.

It will be noticed that the pharmacist has had no representation in any of the four conventions that had been thus far held for revising the Pharmacopœia, but in this convention of 1840 there is an official recognition of the fact that the pharmacist is coming to the front. It was voted that the Committee of Revision request the co-operation of all the colleges of pharmacy in the United States. It was also voted that the variously incorporated colleges of pharmacy in the United States be invited to send delegates to the convention to be held in 1850. The Committee of Revision was directed to meet in Philadelphia, and the first two names on the committee are Drs. Wood and Bache, of dispensatory reputation, and we find the convention organized with Dr. Wood as Chairman, and Dr. Bache as Secretary—a fact to be remembered as it will be noted further along in this paper.

In the Pharmacopœia of 1840 the Latin version, that had previously occupied one-half the book, was left out.

In 1850, another convention met in Washington. Dr. Geo. B. Wood was made President of the convention, and was made Chairman of the Committee of Revision. His partner, Dr. Bache, was also a member of the committee which was instructed to meet in Philadelphia.

The convention of 1850 made arrangements for the holding of a convention in 1860. These arrangements were similar to those adopted in 1840, viz., delegates, not to exceed three in number, from the incorporated State medical societies and colleges and incorporated colleges of pharmacy throughout the United States and incorporated colleges of physicians and surgeons to meet in Washington, D. C., the first Wednesday in May, 1860.

The convention met in 1860 according to this plan, and was organized by the choice of Dr. G. B. Wood as Chairman; we also again find him and his partner, Dr. Bache, the prominent men on the Revision Committee, and the Revision Committee are again instructed to meet in Philadelphia. In the convention, the idea seems to have gained prominence that the Pharmacopœia was not so extensively used as it ought to be, and a suggestion was made that it should be published in a cheap form, presumably for the purpose of a more wide distribution.

The convention in 1860 made arrangements for the holding of a convention in 1870, which convention was duly held, agreed on the plan and rules for the revision, and appointed the Revision Committee, giving them definite instructions; among these instructions was one that they should meet in Philadelphia.

Dr. Geo. B. Wood is again found as a prominent member of the Revision Committee.

When the Pharmacopœia of 1870 was published, criticisms of it began to come in from many directions.

The feeling among all classes had grown very strong that the National Pharmacopœia had too long played the second part to Wood and Bache's Dispensatory; it had become a Philadelphia book rather than a national one. The various revisions of the Pharmacopœia of 1820 having been virtually always Philadelphia work, it was seen that abuses had crept in by its having been in the old rut so long. The Dispensatory of Wood and Bache, a private enterprise based on the Pharmacopœia, had become the standard, and the Pharmacopœia was not to be found in one drug store in fifty in the land. The Dispensatory was a piece of valuable property. The Pharmacopœia was not supposed to have any value.

The Pharmacopœia had not kept pace with the medical and pharmaceutical thought of the country. The Dispensatory was the reference book. Dr. E. R. Squibb was the first man to take action in this matter. He believed it necessary to change the whole plan of revising and publishing the book, and he therefore proposed to the American Medical Association, which represents the physicians of the United States, to take the matter into their hands, he claiming that the work would be better done by them than in any other way. But the American Medical Association did not accede to Dr. Squibb's suggestions, and the regular convention met 1880 in Washington.

This convention was a very large one, for a most lively interest in the Pharmacopœia had been brought about by the various discussions that had taken place, and many of the delegates went to Washington with a strong feeling that it was desirable and advisable to get the revision and publication of the Pharmacopœia out of the old Philadelphia rut.

The fact that Drs. Wood and Bache were now dead made it seem an opportune time for a change.

In thus speaking of Philadelphia influence, it is not intended to do so in any wrong way, for it must be conceded by all that, in the pharmaceutical world, it will be hard to find the equals of many of the men that Philadelphia has furnished, of Proctor and Maisch, and Remington and Shinn, and Taylor and Miller, and many others that we might mention.

It was felt that the first pivotal point in the matter of a change was to secure a President of the convention who was not a resident of Philadelphia. It was a hard struggle, for the conservatives and the progressionists were pretty evenly divided; but at length the latter succeeded, and Dr. Robert Amory, of Brookline, Mass., a delegate from the Massachusetts Medical Society, was chosen President of the convention.

This point being gained, very little difficulty was encountered in arranging all the plans for revision, and it was very noticeable that the pharmacists in the convention were quite as active, if not more so, than the physicians, and when the Revision Committee of twenty-five were appointed, it was found to consist of eleven physicians and fourteen pharmacists, thus showing what a change had come about since the early times when pharmacists knew nothing about the work until it was issued to them by the physicians.

A full report of the proceedings of this very important and interesting convention of 1880 can be found in NEW REMEDIES, 1880, pages 183–90. * * * * * * * *

The new Pharmacopœia will be essentially different from any that have gone before it. It will be much more complete in every respect. It will be a book that will not need a dispensatory to explain it. It will be much more full in its list of articles, and the old division into three parts will be done away with. Measures of capacity will be virtually abandoned, proportions being expressed in parts by weight, as is done in European Pharmacopœias. Many valuable tables will

be introduced, and many explanations of tests that have have always been so much needed in the Pharmacopœia.

In short, it will be a book of which American pharmacists and physicians may be proud, one which will compare favorably with the Pharmacopœia of any other nation.

The changes from the old book may be so great, and the whole plan of the work so different from that we have been accustomed to use, that for a time it will seem strange to us. There will be much unjust and illiberal criticism on it by those who hold so tenaciously to old customs and practices; but, my friends, let us not judge it hastily, but remember that it is the results of the labor of some of the best pharmacists and physicians in the country, and is the result of much mature thought by practical men, and not of the hasty decisions of enthusiasts. It is more fully the apothecaries' book than our pharmacopœia has ever been before, and for this reason, if for no other, we shall owe it allegiance.

While many, and, perhaps, most of the pharmacopœias of the old world are issued by governmental authority, it will be seen, by these historical data, that ours, originally, was simply the result of the work of a self-appointed company of physicians; that this company or convention of physicians arbitrarily arranged for a revision of its work: that this plan has been continued each decade; that the invitations of each convention to send delegates to the next have been gradually extended to a very large number of societies, pharmaceutical as well as medical.

At the convention of 1880, it was voted to request the two national associations, the American Medical Association and the American Pharmaceutical Association, to send delegates to the convention to be held in 1890. The Army and Navy of the United States are also to have three representatives each in the convention of 1890.

This broadening of the representation of the convention gives to its work a character that ought to faithfully represent the needs of all parts of our country, and there is no doubt that the authority of the work thus published in our great republic, in such a democratic way, ought to be, and will be, as fully recognized in our country as the British and German Pharmacopœias are in Great Britain and Germany.

It is sometimes said that such a book ought to be issued by a special act of Congress, and thus given the character of an official government document. It may be answered that in such a case political influence might somewhat affect its character.

This would certainly be undesirable. The Pharmacopœia is in many respects the apothecary's book. It is his authority and guide, and it has been prophesied that in the future revisions, pharmacists, having become educated men in the strict meaning of the term, will take an increasing share of the work and of the responsibility, for the physicians do not want it. They recognize the fact it should be the pharmacists' work, their part being only to say what medicine they desire to have in it, while the pharmacist can best say how such preparations ought to be made. The physicians have done the work in the past simply because the pharmacists could not do it.

Now, how does this book affect our chosen life-work? Does it elevate it or otherwise? What duty have we in regard to it? As the army is like its leader, so, in a sense, are pharmacists like their Pharmacopœia. If it is progressive, it will stimulate them to better work. If it lags, it will clog and be a hindrance to progress.

The coming Pharmacopœia, we have good reason to believe, will elevate our profession to a higher level, and we, as pharmacists, have as our duty in regard to it:

First: To have it in our store as soon as may be (it will probably be ready for sale about the middle of September next).

Second: Having obtained the book, to study it.

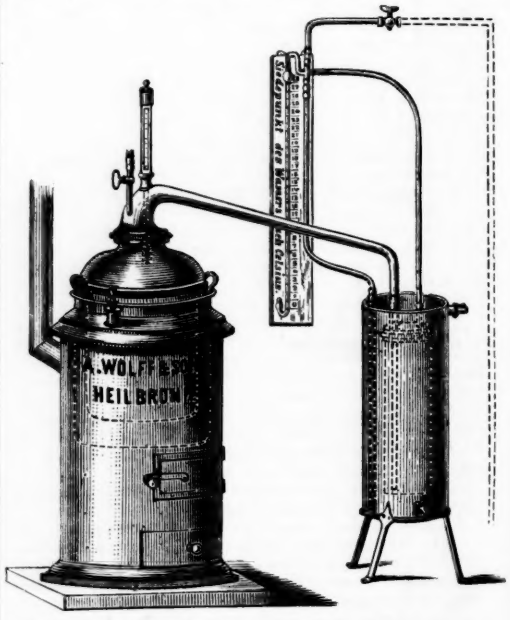
Third: To use it.

Fourth: During the time intervening previous to the meeting of the convention of 1890, to try in every way to learn how the revision of 1880 can be improved, and to be ready to help along such improvements when the proper time arrives.

A New Vacuum Apparatus for Pharmaceutical Purposes.

MODERN pharmacy has been enabled to banish from the dispensing counter a large number of badly prepared and often inert preparations, in consequence of the substitution of steam for the old-fashioned open fire. A still greater improvement is due to the introduction of the vacuum apparatus, which permits evaporation at a greatly reduced temperature. Indeed, there are many products, now valued among the most active and useful remedies, which could never have been placed at the physician's disposal but for the last-named apparatus. As generally constructed, however, a vacuum-pan with accompanying parts is beyond the reach of any but those who manufacture on a considerable scale, owing to its great cost and the more or less complicated nature of its construction.

This drawback seems to have been removed by a simplified apparatus, made and sold by A. Wolff & Son, of Heilbronn, Germany, of which we give an illustration. It differs from other similar constructions, particularly, by having the globular head made of stout, well-annealed glass, which permits a constant watch of the process. The



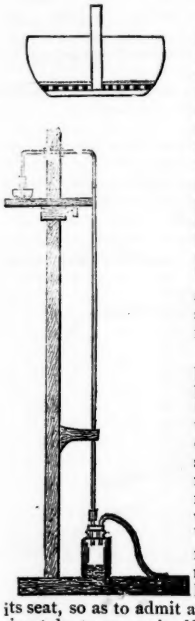
boiler is made of tinned copper, and is fixed in a copper water-bath, which may be heated in any manner desired—either by direct fire or by steam. The neck of the still-head has a perforation for the insertion of a thermometer, and also carries a short tube with stop-cock, which may be used either to permit air to pass into the apparatus or to regulate the distillation when too violent, or to refill the boiler. The suction or aspiration is performed by a water-jet, which may, at the same time, also be utilized for rapid filtration. To produce the best effects, the pressure of water, supplying the water-jet, should be sixty to seventy-five pounds, or a fall of water of about thirty-three feet, or more, may be utilized.

The capacity of the vacuum-pan is fifteen liters (nearly four gallons), with an evaporating surface of 270 *mm.* (nearly eleven inches) in diameter. If the proper vacuum is attained, quantities of four to six litres (about one gallon to one and five-eighths gallons) may be evaporated during one hour. An almost complete vacuum may be produced, and the quantity of water consumed per hour amounts to

about twenty-one gallons. It is not necessary to empty the liquid into the vacuum-pan; small capsules, containing liquids to be evaporated, may be suspended in the apparatus. Together with the condenser, the apparatus takes up a space of about 90 *cm.* (35 inches) by 50 *cm.* (20 inches).

The apparatus, as shown in the cut, costs 365 marks in Heilbronn.

Filtering Apparatus.



MR. P. CASAMAJOR describes* a new modification of apparatus for filtration by aspiration consisting of the following parts: A perforated plate (preferably of platinum) of circular shape, has a tube attached to its centre over an opening in the plate of corresponding size. The plate is to be laid in the bottom of a dish of porcelain, glass, or platinum, leaving a space between them, but so adapted that no opening exists where the edge of the plate joins the sides of the dish. The tube is to be connected with an aspirating contrivance; the one shown in the second figure serving such purpose very well.

The filtering medium—paper, paper pulp, or asbestos pulp—is placed on the top of the perforated plate. Distilled water may be used to fill the aspirating tube to establish a flow, or a bottle with suction tube, as shown in the figure may be used for this purpose and replaced by some other vessel when the flow is established. When the filtration is completed, raising the edge of the filtering medium slightly with a needle, or lifting the perforated plate from its seat, so as to admit air below it, will allow the aspiration tube to empty itself.

Purification of Sulphuric Acid by Crystallization.

MR. R. S. TJADEN-MODDERMANN, of Groningen, writes that he has long been in the habit of purifying sulphuric acid by crystallization of the hydrate $H_2SO_4.aq.$, and that this simple method is completely satisfactory. All sorts of impurities, among them lead sulphate, arsenious, and nitric acids, may be completely eliminated by repeated crystallization. The process hardly needs a description; in brief, it is as follows: The sulphuric acid properly diluted with water,† contained in glass vessels only filled two-thirds full, is exposed during one night to a freezing temperature in the open air. If the dilution was correct, almost the whole of the acid will be found frozen next day. As it is very important to completely separate the impure mother liquid from the crystals, the author has constructed a centrifugal apparatus, so arranged that both liquid and solid acid only come in contact with glass. By means of this apparatus, the separation of the crystals is easily accomplished. One recrystallization is usually sufficient for separating lead and arsenic, while the higher oxides of nitrogen often require a repetition of the process to remove them.

It is not always easy to obtain a first crop of crystals in a sulphuric acid, owing to some variation in the amount of water; but a once crystallized acid may be recrystallized without any difficulty. The flask containing it should be set in ice, and, if no crystals make their appearance within an hour, common salt is added to the ice. After another hour or so, crystallization will be found to have commenced.—After *Zeit. f. Analyt. Chem.*, 1882, 218.

† Journal of the Amer. Chem. Society, vol. iii.
* Until its specific gravity is 1.785 at 15° C. (59° F.).—ED. N. R.

[ORIGINAL COMMUNICATION.]

Hydrostatic Pressure as Applied to Pharmaceutical Purposes.*

BY H. A. ESTABROOK.

THE application of this principle to the practical workings in the laboratory of the pharmacists is of comparatively recent date among us, and to *whomever* belongs the honor of first making use of it in this connection, the honor of first bringing it, in a general way, before the public attention, certainly belongs to Messrs. Rosenwasser & Co.; and, giving them *all* the credit they may claim, we will, for the time being, drop the name "Rosenwasser Percolator," and use instead the phrase "new method."

The interest manifested in all new methods of percolation, and the eagerness with which new ideas upon the subject are sought after, are proof conclusive that manipulations, in this branch of our profession, have not proved in the past altogether satisfactory, and I apprehend that this arises from two causes: first, from the difficulty of finding in the market drugs of the proper degree of fineness, and at the same time of a uniform powder calculated to produce the best results; and second, from a lack of good judgment in manipulation, which is oftentimes sheer carelessness.

While the new method does not in any sense overcome the *necessity* of the utmost vigilance and care in selecting and manipulating drugs, it *does*, in a measure, insure satisfactory results against these, the most common contingencies; and the ones, I think, which promulgate the growing evil among druggists of buying already prepared, even the most *common* preparations which they dispense, when, by so doing, we dodge a responsibility which we owe to our clerks, of giving them an opportunity to acquire a thorough and practical knowledge of the business, which nothing but experience can give. Therefore, I put in this plea for *our boys*, who, for a trifling pecuniary compensation, are spending years with us, in order that they may get such a practical knowledge of the business as shall enable them to compete successfully with life's heavy tides.

But to come more directly to my subject, I do not know that I can better illustrate the advantages of the new method than by following through the workings of one pound of fluid extract, comparing it somewhat with the workings by the old method of the Pharmacopœia, making suggestions and comments according to my experience.

I have brought here for the inspection of any who may desire, what will be, when added together, one pound of fluid extract of valerian; this is in five bottles, each one marked indicating just the part of the percolate which it represents as it passed from the percolator. I have here also one of the small Rosenwasser percolators, so that we may follow through the workings more satisfactorily.

In preparing the drug for the percolator, I first measured out 18 fluid ounces of alcohol, which was the whole amount used in making the 16 fluid ounces of fluid extract, *then*, instead of following the directions of the Pharmacopœia to "moisten the drug *thoroughly*," my experience leads me to moisten the drug *slightly*. In this case I used 3½ fluid ounces of the menstruum instead of 6 fluid ounces, as directed in the Pharmacopœia. Then, after packing the drug very tightly in the percolator, I turned on the remainder of the menstruum from a reservoir four feet above the percolator, and in one hour the percolate appeared, when immediately shutting off the flow from the reservoir, by means of a clamp devised for this purpose, and drawing into a graduate the menstruum remaining in the reservoir and tube, I found I had 6 fluid ounces; therefore you will see that 16 troy ounces of valerian absorbed 12 fluid ounces of menstruum (whereas the same amount of drug worked by the old method absorbed 17 fluid ounces of menstruum before any percolate appeared).

Then turning the remaining 6 fluid ounces of menstruum back into the reservoir, I let the percolation go on as rapidly as it would, and when the menstruum had got down to the mouth of the percolator, I filled the reservoir with water to displace the menstruum absorbed and held

* Read at the reeent meeting of the Massachusetts State Pharmaceutical Association.

by the drug, with the result which the extract I have here illustrates.

This demonstrates, I think, that the soluble matter in one pound of drug under the most favorable circumstances can be displaced by the new method with a little more than one pound of menstruum, the small allowance being made for the assimilation of the water with the menstruum in the process of displacement. I have spoken of the more favorable drugs under the most favorable circumstances. Such drugs as senna and rhubarb in my hands have required more menstruum to exhaust, but in no case, thus far, have I exceeded 26 fluid ounces to the pound. With this class of drugs, I have found a higher pressure—through 8 feet of tubing instead of 4 feet—to work more satisfactorily. This fluid extract of valerian, you will see, cost me at the extreme sixty-five cents, while the cost of a pound from any of the reliable manufacturers, is to the retailer, about ninety-five cents; hence I find that, on an average, the apothecary can save from 25 to 30% by making his own fluid extracts which, I am sure, is worthy of attention in these days of sharp competition.

The principles involved in the new method are, that the drug, after being tightly packed, is kept within this prescribed limit, and as it expands it must expand within and upon itself until it becomes as easy for the menstruum to dissolve out the soluble matter and to pass down through the pores which this occupies, as to pass between the particles of powdered drug. Thus by the application of hydrostatic pressure, the operator has within his hands facilities for forcing the menstruum through what may seem almost a solid mass.

But another and very practical use to which I have applied this principle is to rapid filtration, for which it by far excels all other methods I have ever tried; for filtering large quantities of elixirs and such things as filter slowly, I have packed into the percolator two or three inches in thickness of well-washed beach-sand, in the same manner as I would pack a drug. This makes a body on which to work the filter-paper, which I place at both the top and bottom of the sand; *then*, by putting the liquid to be filtered into the reservoir, varying the height of the reservoir from the filter to suit the emergency, you have things all your own way.

In making syrups, I am not satisfied that this principle can be applied with any commensurate advantage.

So much for the *principle* of hydrostatic pressure as applied to pharmaceutical purposes. With regard to the machines offered for sale by Messrs. Rosenwasser & Co., there is not much that can be said in their favor. In short, I am surprised that any firm will put such shabbily constructed machines upon the market, when with a very little more expense and a trifling advance in price, if need be, they might give the trade something of real practical value for their money.

The price at the present time for their useless one-pound percolator is, I believe, three dollars They have advanced the price since their advertisement in December last. Now for the sum of three dollars any druggist can have a single percolator made, constructed on the same principle, out of eighteen-ounce, sheet, nickel-plated copper, with diaphragm and rod complete, and nickel plated. The cost for larger sizes is simply the cost of the material, but a more economical way, and one that has been suggested by Mr. Bartlett, is to take a five-pint bottle, cut off the bottom, and by the use of camphor and turpentine bore two holes on opposite sides of the bottle through which you can pass a stick for the support of the rod and diaphragm.

Ingenuity may devise many methods by which this principle can be applied to laboratory work, and I am sure that a fair trial will demonstrate its usefulness.

To Cover the Odor of Iodoform.

DR. PUTZ, of Graefrath, has tried all the recommended means for covering the odor of iodoform, and confines himself now exclusively to oil of mirbane or nitrobenzol, all the others having failed in his hands. Six drops of nitrobenzol are used for every gram of iodoform.—*Pharm. Zeit.*

The German Pharmacopœia.

THE new German Pharmacopœia has been published by the Imperial German Printing Office at Berlin, provisionally, from the final manuscript elaborated by the Commission on Revision. It still requires to be translated into Latin, which is much to be regretted, and it is only the Latin text, in which some additions and corrections will be incorporated, which will be able to form the basis for the retranslation into German.

In the preface, after a statement of the composition and methods of working of the Commission, the principles are given which were observed in revising and publishing the work. Among them are the following:

1. It was aimed to attain uniformity in language and in the arrangement of the different subdivisions of the articles.

2. In the case of chemicals, the limit of purity was defined, whenever necessary or practicable.

3. Chemical formulæ were not adopted; nor a table of atomic weights; nor were the names of authors added to the Latin names of plants or animals.

4. The directions concerning the preservation of chemicals refer to the tables *B* and *C*, which are of no special interest in this country, since no law can be enforced here which could direct either the particular place or the particular manner in which poisonous substances should be kept.

5. No characteristics were added to the definition of those remedies which were adopted for use in veterinary practice; and those among them which are only used externally were left without requirements of purity.

6. The solubilities in water and alcohol were given in exact figures in the text [not always.—ED. NEW REM.]; but for practical purposes, a table of solubilities was appended, which gives the solubilities in round numbers.

7. Reactions of identity have been treated, wherever possible, in a separate paragraph.

8. In the tests for purity, the more easily performed, and, at the same time, reliable methods have been preferred. For this reason, volumetric analysis was preferred in many cases to gravimetric.

9. In testing for one and the same substance in different portions of the work, the same method has, in general, been followed.

While we must reserve a detailed criticism of the work until the appearance of the official edition, we append a number of descriptions and formulæ which may be of special interest at present:

*Paraffinum Liquidum.** Liquid Paraffin.

A limpid, oily liquid, obtained from petroleum, after removal of low-boiling fractions, and having a spec. grav. of at least 0.840 to 0.845.

It should be free from colored, fluorescent, or odorous constituents, should not boil below 360° C. (680° F †), and should respond to the tests of purity required of solid paraffin.

Paraffinum Solidum. Solid Paraffin.

A firm, white, micro-crystalline, odorless mass, obtained from combustible minerals (*sic*), which melts at a temperature of 74°–80° C. (165.2°–176° F.).

If sulphuric acid be heated during one day, on a water-bath, with the paraffin, under frequent shaking, the latter should not be altered, and the acid should not assume more than a light-brownish color. Metallic sodium brought in contact with it under the same conditions, should remain

* The printed drafts of the Pharmacopœia contained an article entitled "Axungia Mineralis," in which *paraffin oil* or *vaseline oil* was defined; also *ceresin*, which name was applied to the solid paraffin; and finally *vaseline*, which term was, curiously enough, applied to the mixture of one part of ceresin with four parts of paraffin oil.

When the work was issued, it was accompanied by four pages of lithographed corrections, among which were the cancellation of of the article "Axungia Mineralis," and the substitution therefor of the *Paraffinum liquidum*, *Paraffinum solidum*, and *Unguentum Paraffini*.

† The equivalents of temperature according to Fahrenheit were added by us.

bright; and alcohol boiled with the paraffin should not acquire an acid reaction.

Unguentum Paraffini. Paraffin Ointment.

Solid paraffin, *one part*.....1
Liquid paraffin, *four parts*.....4

The mixture should be white, translucent, of the consistence of an ointment; when examined under the microscope, it should be seen to be filled with minute crystals; and it should become liquid between 35° and 45° C. (95° to 113° F.).

Balsamum Copaivæ. Balsam of Copaiba.

A clear, brownish-yellow liquid, not more than slightly fluorescent, having a peculiar aromatic odor, and a persistent sharp, and bitterish taste. The more viscid grades, of spec. grav. 0.96 to 0.99, should be selected, which leave, on evaporation, on the water-bath, a light-brown resin appearing transparent, amorphous and brittle when cold. If a portion of the balsam be diluted with twenty parts of disulphide of carbon, and the liquid shaken with a few drops of a cooled mixture of equal parts of sulphuric and fuming nitric acid, no red or violet color should appear. One part of the balsam, briskly shaken with five parts of water of 50° C. (122° F.), should produce a turbid mixture, which speedily separates, on the water-bath, into two clear layers.

Balsamum Peruvianum. Balsam of Peru.

A brown-red to very dark-brown liquid, clear and transparent in thin layers, not viscid, having an agreeable odor, and a sharp, biting, and bitterish taste. Its spec. grav. is 1.137 to 1.145. It is not sticky, and does not dry up on exposure to air. It forms a clear mixture with an equal weight of alcohol. Three parts of the balsam mix with one part of disulphide of carbon without turbidity; but, after the addition of eight more parts of the disulphide, a brownish-black resin separates. The clear liquid poured off from the latter should not be darker than light-brownish, and should not be fluorescent, or only faintly so. If one *gm.* of the balsam is briskly shaken with five *gm.* of purified petroleum, the mixture set aside for some time, and then thirty drops allowed to evaporate spontaneously in a porcelain capsule, the oily, yellowish-colored residue should not exhibit, even on warming, the odor of turpentine, storax, or copaiva; nor, when mixed with five drops of strong nitric acid (1.30 to 1.33 spec. grav.), should it assume a blue or bluish-green color, in the cold or on gently warming. If five drops of the balsam are briskly shaken with three *cc.* of water of ammonia, only a slight and soon collapsing foam should be formed on it, and the mixture should not become gelatinous, even after standing for twenty-four hours. On triturating ten drops of the balsam with twenty drops of sulphuric acid, a homogeneous, tough, and cherry-red mixture should be formed, which, when washed with cold water, after a few minutes, should leave behind a resinous residue, brittle when cold. When distilled with two hundred times its weight of water, the balsam should not yield any volatile oil.

Bismuthi Subnitras. Basic Nitrate of Bismuth.
[With directions for preparation.]

A white, micro-crystalline powder of an acid reaction. When heated to 120° C. (248° F.), it should lose three to five per cent of its weight; on ignition, it evolves yellowish-red vapors, and leaves behind seventy-nine to eighty-two per cent of oxide of bismuth.

0.5 *gm.* of basic nitrate of bismuth dissolve in twenty-five *cc.* of diluted sulphuric acid without evolving carbonic acid. If a portion of this solution be mixed with excess of ammonia, the colorless filtrate should remain unaffected by solution of hydrosulphuric acid. Another portion, diluted with water, and completely precipitated by hydrosulphuric acid, should yield a filtrate which leaves no residue on evaporation.

Nitric acid should dissolve the salt clear; the solution should not be clouded either by nitrate of silver or by solution of nitrate of barium (1=50*). When heated with an excess of soda solution, no vapor of ammonia should be evolved; on filtering this liquid, and heating the filtrate in a test-tube with a few pieces of clean iron wire and a little granulated zinc, the escaping gas should not color paper moistened with solution of nitrate of silver (1=2*) within one hour.

Cera Alba. White Wax.

Beeswax, bleached. Melts at about 64° C. (147.2° F.) to a colorless liquid. If two parts of alcohol (spec. grav. 0.830–0.834) are mixed with seven parts of water, and the mixture is allowed to stand at 15° C. (59° F.) until all air-bubbles have disappeared from it, pure wax, when immersed in the liquid, should float or remain suspended in it, whenever the spec. grav. of the mixture has been raised to between 0.965 and 0.975 by the addition of water. Excepting the color, white wax has, in general, the same properties as yellow wax. It should not have a rancid odor.

Cera Flava. Yellow Wax.

A yellow mass, breaking, when cold, with a granular, dull, non-crystalline surface, and melting between 63° and 64° C. (145.4°–147.2° F.) to a clear, yellow-red liquid of an agreeable odor. After congealing, the wax appears indistinctly crystalline under the microscope. If alcohol be mixed with three times its weight of water, and the mixture allowed to stand at 15° C. (59° F.) until the air-bubbles have disappeared, a piece of wax placed in the liquid should remain suspended in it, whenever the spec. grav. of the liquid has been raised to between 0.955 and 0.967, by the addition of water. Wax is soluble, with the exception of a very scanty brownish-yellow residue, in three hundred parts of boiling alcohol (spec. grav. 0.830). On cooling, a white crystalline mass separates; the pale-yellowish liquid filtered from this should not be rendered turbid by water, and should not impart more than a very faint red tint to blue litmus paper. If one part of wax be boiled for an hour with three hundred parts of alcohol of spec. grav. 0.960, with the addition of one part of anhydrous carbonate of sodium, and the liquid then cooled and filtered, no precipitate should be produced in the filtrate by hydrochloric acid.

Chininum Bisulphuricum.
[*Quiniæ Bisulphas.*]† Bisulphate of Quinine.

White, shining prisms of a bitter taste, forming blue-fluorescent, acid solutions with 11 parts of water or 32 parts of alcohol. If either of these solutions be diluted with about 200 parts of water and 50 parts of chlorine water, the liquid turns green on the addition of ammonia. The aqueous solution of the salt is rendered turbid by nitrate of barium, not by nitrate of silver. In a glass tube, bisulphate of quinine melts at 80° C. (176° F.). 100 parts of the salt, dried at 100° C. (212° F.), leave behind 77 parts.

Two *gm.* of the salt dried with the addition of one *gm.* of water of ammonia yield a residue which should be tested as is stated under *Chininum sulphuricum*. If the salt be moistened with hydrochloric or sulphuric acid it should remain colorless.

The salt should be preserved in a place protected from light.

Chininum Ferro-Citricum.
[*Ferri et Quiniæ Citras.*] Citrate of Iron and Quinine.

	Parts.
Citric acid	6
Iron-filings	3
Quinine freshly precipitated from 1.3 parts of sulphate of quinine by solution of soda	1
Distilled water	500

* These formulæ are adopted in the Pharmacopœia to indicate that one part of the salt is dissolved with distilled water to fifty parts (1=50), or one part is dissolved so as to make two parts (1=2), etc., etc.

† The titles in brackets were added by us, being those most familiar to our readers.

Dissolve the citric acid in the distilled water and add the iron. Digest the mixture for forty-eight hours on a water-bath, occasionally agitating; then filter, evaporate to a thin syrup and, when it is cold, add to it the quinine. When this is completely dissolved, spread the liquid upon glass or porcelain plates, and dry it.

Shining, transparent, dark red-brown scales of a ferruginous and bitter taste; slowly but completely soluble in water, in all proportions; but little soluble in alcohol.

One *gm.* of the compound, dissolved in 4 *cc.* of water, mixed with solution of soda, and shaken with 10 parts (*sic*) of ether, should yield, after evaporation of the ethereal layer, at least 0.09 *gm.* of quinine.

The compound should be preserved in a place protected from light.

Chininum Hydrochloricum.
[*Quiniæ Hydrochloras.*] Hydrochlorate of Quinine.

White, crystalline needles of a bitter taste, yielding neutral, non-fluorescent solutions with 3 patrs of alcohol and 34 parts of water. If either of these solutions be diluted with 200 parts of water and 50 parts of chlorine water, it turns green on the addition of ammonia in drops. Nitrate of silver produces a white precipitate in the solution.

One hundred parts of the salt, dried at 100° C. (212° F.), should leave behind 91 parts. If 2 *gm.* of the salt be evaporated with 1 *gm.* of sulphate of sodium and 20 *gm.* of water, the residue extracted with 12 *gm.* of boiling alcohol, and the alcoholic filtrate evaporated, the residuary sulphate of quinine should answer to the tests given under *Chininum sulphuricum.*

Chininum Sulphuricum.
[*Quiniæ Sulphas.*] Sulphate of Quinine.

White, flexible, crystalline needles of a bitter taste, soluble in 6 parts of boiling alcohol and in 25 parts of boiling water. It requires 800 parts of cold water for solution; this latter shows no fluorescence and does not have any reaction, or at least no acid reaction towards litmus paper. A drop of diluted sulphuric acid added to the solution produces a blue fluorescence. If one part of chlorine water be added to 5 parts of a cold saturated aqueous solution of the salt, the latter turns green on the addition of water of ammonia in drops. The aqueous solution is precipitated by nitrate of barium, but not by nitrate of silver. 100 parts of sulphate of quinine, when dried at 100° C. (212° F.), should leave behind at least 85 parts of residue.

If 2 *gm.* of sulphate of quinine are shaken at 15° C. (59° F.), with 20 *cc.* of water, the mixture filtered after half an hour, and 5 *cc.* of the filtrate in a test-tube gradually mixed with water of ammonia (sp. gr. 0.960), until the separated quinine is redissolved, not more than 7 *cc.* of the water of ammonia should be consumed. If sulphate of quinine be moistened with nitric or with sulphuric acid, it should not become colored.

One *gm.* of the salt dissolves in 7 *cc.* of a mixture of two volumes of chloroform and one volume of absolute alcohol, on being warmed for a short time to 40°–50° C. (104°–122° F.). The solution should remain entirely clear after cooling.

Chloroformium.
[*Chloroformum.*] Chloroform.

A clear, colorless liquid of a characteristic odor, a sweetish taste, very little soluble in water, easily in alcohol, ether and fixed oils. It boils at 60° to 61° C. (140°–141.8° F.). Sp. gr. 1.485 to 1.489. If warmed with alcoholic solution of potassa, with addition of sulphate of aniline, a penetrating, disagreeable odor is produced.

Water shaken with chloroform should not redden blue litmus paper, nor should it become turbid if it is carefully poured on top of a layer of tenth-normal solution of nitrate of silver previously diluted with an equal quantity of water. Drops of chloroform which are allowed to fall through a column of solution of iodide of potassium of at least three centimeters in height, should not become colored. It should be free from the suffocating odor of phosgene. If 20 *gm.* of chloroform are repeatedly shaken with 15 *gm.* of sulphuric acid in a glass-stopped bottle of 3 *cm.* in diameter, which had previously been rinsed with sulphuric acid, no color should be imparted to the chloroform within one hour.

Cortex Chinæ.
[*Cinchona.*] Cinchona Bark.

The bark of the branches and trunk of cultivated species of cinchona, particularly of *Cinchona succirubra*, occurring frequently in quills of about 6 decimeters (about 24 inches) in length and 1 to 4 centimeters (⅓ to 1⅗ inch) in diameter; also is half-quills of corresponding dimensions. The bark has a short fibrous fracture; is covered with a thin, grayish-brown corky layer having coarse longitudinal wrinkles and short transverse fissures; and its interior surface is brown-red and fibrous. Under the microscope, the bark exhibits the liber-fibres characteristic of the cinchonas. If 0.1 *gm.* of the bark be heated to redness in a small glass tube, a fine carmine-red tar is produced.

Cinchona bark furnishes a red-brown powder, which should contain at least 3.5 per cent of alkaloids, when tested by the following process:

Shake 20 *gm.* of the powder thoroughly and repeatedly with 10 *gm.* of water of ammonia, 20 *gm.* of alcohol [0.830–0.834], and 170 *gm.* of ether [0.724–.0728], and after macerating one day, pour off 120 *gm.* of the clear liquid. Add three cubic centimeters of standard hydrochloric acid, remove the ether by distillation or evaporation, and, if necessary, add more hydrochloric acid until the solution has an acid reaction. Then filter, and mix it, when cold, with 3.5 *cc.* of normal solution of potassa. After the alkaloids have separated, add to the clear, supernatant liquid enough solution of potassa, until no more is precipitated. Collect the whole precipitate upon a filter, and wash with small portions of water, successively poured on, until drops of the washings, allowed to glide upon the surface of a cold-saturated, aqueous solution of sulphate of quinine, no longer produce a cloudiness. After allowing the alkaloids to drain, press them gently between bibulous paper, and dry them sufficiently by exposure to air, until they can be removed to a glass capsule. Then dry them completely over sulphuric acid, and finally on the water-bath.

The weight of the alkaloids thus obtained should not be less than 0.42 *gm.* On boiling a small portion of this with 300 times its weight of water, flakes of quinine should separate from the filtrate on cooling. If 1 part of chlorine water be added to 5 parts of the decanted and cooled liquid, and ammonia be added immediately in drops, a fine green color should be produced.

Extracta. Extracts.

As in the first edition, three kinds of extracts are recognized, viz.:

thin, thick, and dry extracts.

The latter, which were formerly prepared with dextrin as a diluent, are now directed to be made from the thick extracts, by mixing

4 parts of extract, and
3 parts of licorice root, in fine powder,

in a warmed porcelain capsule, and drying the mixture at 40°–50° C. (104–122° F.), to constant weight. The mass is rubbed to powder while still warm, and then mixed with enough finely powdered licorice root to make the product weigh twice as much as the quantity of extract used (namely 8 parts).

Kalium Bromatum. Kaliumbromid.
[*Potassii Bromidum.*] Bromide of Potassium.

Small, cubical, shining crystals, permanent in air, soluble in 2 parts of water and in 200 parts of alcohol. The aqueous solution mixed with a little chlorine water and shaken with ether or chloroform, colors the latter reddish-yellow; when mixed with excess of tartaric acid, it affords a white, crystalline precipitate on standing.

When heated on a platinum loop, the salt should color the flame at once violet. A portion of the salt, powdered and spread upon white porcelain, should not at once be rendered yellow by a drop of diluted sulphuric acid. A

few fragments of the salt, laid upon moistened red litmus paper, should not at once impart a violet-blue color to the place of contact. A solution of 1 *gm.* of the salt in 10 *cc.* of water, after addition of a few drops of solution of ferric chloride, should not impart a violet color to chloroform added to the mixture. 20 *gm.* of the solution (1=20) mixed with 4 drops of solution of nitrate of barium, should not be rendered turbid.

Ten *cc.* of an aqueous solution containing 3 *gm.* of the well-dried salt in 100 *cc.*, mixed with a few drops of solution of chromate of potassium, should not require more than 25.6 *cc.* of the tenth-normal solution of nitrate of silver, until a permanent red tint is produced.

Kalium Chloricum. Kaliumchlorat.
[*Potassii Chloras.*] Chlorate of Potassium.

We quote this title merely to draw attention to the peculiar nomenclature adopted. The *Latin* terms were *formerly:*
Kali chloricum. Chlorate of Potassium.
Germ., Chlorsaures Kali.
Kalium chloratum. Chloride of Potassium.
Germ., Chlorkalium.

In the new Germ. Pharmacopœia, the former salt is called, in Latin, *Kalium chloricum*, and in German, *Kaliumchlorat.* The other salt, while not actually occurring in the work, would be named, according to the analogy of other salts, in Latin, *Kalium chloratum*, and in German, *Kaliumchlorid.* Now this is rather confusing, since the German terminations have a different vowel from the corresponding Latin term.
—chlor*i*cum being the—chlor*a*t, and—chlor*a*tum being the —chlor*i*d.

We also consider the following terms as too similar and liable to lead to confusion, although they are chemically correct, viz.:
Hydrargyrum Bichloratum—Quecksilberchlor*id.*
Hydrargyrum Chloratum—Quecksilberchlor*ür.*
(In these cases a distinguishing adjective, like "corrosivum" and "mite" would be an additional safeguard).
Hydrargyrum Bijodatum—Quecksilberjod*id.*
Hydrargyrum Jodatum—Quecksilberjod*ür.*

Kaliumjodatum. Kaliumjodid
[*Potassii Iodidum.*] Iodide of Potassium.

White, cubical crystals, not deliquescent on exposure to air, having a sharp, saline, afterwards bitter taste, soluble in 0.75 parts of water and in 12 parts of alcohol. The aqueous solution, mixed with a little chlorine water and shaken with chloroform, colors the latter violet-red. When mixed with excess of tartaric acid, it yields a white, crystalline precipitate on standing.

When heated on a platinum loop, the salt should color the flame at once violet. A few fragments placed upon moistened red litmus paper should not at once color the latter violet-blue. The aqueous solution (1 = 20) should not be affected by solution of hydrosulphuric acid, and, when mixed with diluted sulphuric acid, it should not be at once rendered blue upon the addition of solution of starch. If some of the aqueous solution mixed with gelatinized starch be added to an effervescing mixture of zinc and hydrochloric acid, the latter should not become blue.

Twenty *cc.* of the aqueous solution (1 = 20) should not be rendered turbid, within five minutes, by ten drops of solution of nitrate of barium. When gently warmed with a small fragment of ferrous sulphate and a drop of solution of ferric chloride, with addition of solution of soda, the mixture should not turn blue on being supersaturated with hydrochloric acid.

If 0.2 *gm.* of the salt are dissolved in 2 *cc.* of water of ammonia, then precipitated (with agitation) by 13 *cc.* of tenth normal solution of nitrate of silver, the filtrate, on being supersaturated with hydrochloric acid, should not be rendered so turbid as to lose its transparency within ten minutes.

Morphinum Hydrochloricum. Morphinhydrochlorat.
[*Morphiæ Hydrochloras.*] Hydrochlorate of Morphine.

White, silky, crystalline needles, often united in groups, or white, cubical, microcrystalline fragments, without action upon litmus paper, and having a very bitter taste. Soluble in 25 parts of water and in 50 parts of alcohol. When cautiously heated, it melts, and at 100 C. (212° F.) it loses 14.5 to 15 per cent of its weight.

The aqueous solution of the salt is rendered slightly turbid by carbonate of potassium; water of ammonia produces a precipitate which is not sensibly soluble in excess of ammonia or in ether, but is easily soluble in solution of soda and also in lime-water. If the salt be triturated with sulphuric acid, and basic nitrate of bismuth be sprinkled upon the mixture, a dark-brown color makes its appearance. When moistened with nitric acid, the salt turns red.

When *acetate of morphine* is prescribed, the *hydrochlorate* is to be dispensed, on account of its greater stability.

[The last paragraph presents a feature which is worthy of imitation in other pharmacopœias. There are some synonyms under which certain preparations are often prescribed, but which are, properly speaking, incorrect terms. The Pharmacopœia, therefore, cannot afford to quote them in the title. But *some* place must be provided for them. The new *Germ. Pharm.*, for instance, does not give the synonym "Acidum Chrysophanicum" under "Chrysarobinum," simply because the former is not a synonym, although it is the common trade-name. In place thereof a paragraph is attached to the description of chrysarobinum, which says: This is to be dispensed when chrysophanic acid is prescribed by the physician. So it might be said, in the U. S. Ph., under "Liquor Ferri Subsulphatis:" "This is to be dispensed when 'liquor ferri persulphatis' is prescribed by the physician," because the latter term, though very commonly used, is really incorrect, and cannot be any longer recognized by the Pharmacopœia as a synonym.]

Morphinum Sulphuricum. Morphinsulfat.
[*Morphiæ Sulphas.*] Sulphate of Morphine.

Colorless, needle-shaped, neutral crystals, soluble in 14.5 parts of water. At 100° C. (212° F.) the crystals lose nearly 12 per cent of their weight (water). The salt should correspond to the tests of purity demanded of the preceding.

Natrium bromatum. Natriumbromid.
[*Sodii Bromidum.*] Bromide of Sodium.

A white, crystalline powder, unaltered in dry air, soluble in 1.8 parts of water and in 5 parts of alcohol. When heated on a platinum loop, the salt produces a yellow flame which, when observed through blue glass, should not appear red for more than a short time. The aqueous solution, mixed with a little chlorine water and shaken with ether, colors the latter reddish-yellow.

Bromide of sodium, triturated and spread upon white porcelain, should not at once assume a yellow color if a drop of diluted sulphuric acid be let fall upon it. When laid upon moistened red litmus paper, it should not at once impart a violet-blue tint to the place of contact. Twenty *gm.* of the aqueous solution (1 = 20), mixed with a few drops of solution of ferric chloride and shaken with chloroform, should not color the latter violet. Twenty *gm.* of the same solution, mixed with 4 drops of solution of nitrate of barium, should not be rendered cloudy.

Ten *cc.* of a solution of 3 *gm.* of the well-dried salt in 100 parts (*sic*) of water, mixed with a few drops of solution of chromate of potassium, should not require more than 29.6 *cc.* of the tenth-normal solution of nitrate of silver, until a permanent red color appears.

Oleum Amygdalarum. Almond Oil.

The fixed oil of the seeds of *Prunus Amygdalus.* Light-yellow, remaining clear at — 10° C. (14° F.), of mild taste; spec. grav. 0.915–0.920. Fifteen parts of the oil, briskly shaken with a mixture of 2 parts of water and 3 parts of fuming nitric acid, should give a whitish (not a red or brownish) mixture, which separates, after some hours, into a firm, white mass, and a scarcely colored liquid.

Oleum Anisi. Oil of Anise.

The volatile oil of the fruits of *Pimpinella Anisum.* When cold, a white, crystalline mass, partly melting at 15° C. (59° F.); when completely fluid, a colorless, strongly refractive, very aromatic liquid of spec. grav. 0.980–0.990. It mixes clear with alcohol;* this solution does not affect litmus, and is not colored by ferric chloride. One drop of the oil, when triturated with sugar and shaken with 500 *gm.* of water, should impart to the latter a pure taste of anise.

Oleum Aurantii Florum. Oil of Orange Flowers.

The oil obtained by distillation from the fresh flowers of *Citrus vulgaris.* A brownish liquid of finest aroma. If a little of it be covered with an equal quantity of alcohol, and the glass be slowly undulated, the oil exhibits a fine, violet fluorescence. The alcoholic solution of the oil has a bitterish taste and does not affect litmus.

Oleum Cacao. Cacao-Butter.

A fat expressed from the decorticated seeds of *Theobroma Cacao.* Color not deeper than very pale-yellowish; the agreeable odor and mild, pure taste recalling those of cacao. At 15° C. (59° F.) the fat is brittle; at 30°–35° C. (86°–95° F.) it melts to a clear liquid. The solution in 2 parts of ether remains clear when exposed for one day at a temperature of 12°–15° C. (53.6°–59° F.).

Oleum Cajeputi. Oil of Cajeput.

The volatile oil of the leaves of *Melaleuca Leucodendron,* mostly colored green by copper. Of peculiar odor and aromatic, mostly bitterish taste. If the oil be shaken with water containing a drop of diluted hydrochloric acid, it becomes colorless. If 1 part of iodine be gradually added to 5 parts of the oil at 50° C. (122° F.), and the mixture cooled, it congeals to a crystalline magma.

Oleum Cantharidatum. Cantharidal Oil.

Cantharides, in coarse powder..... 3 parts.
Rape oil ....10 "

Digest, for ten hours, in a steam-bath, express, and filter. It has a greenish-yellow color.

Oleum Carvi. Oil of Caraway.

The higher boiling fraction of the oil of the fruits of *Carum Carvi.* Pale-yellowish or colorless liquid of finest aroma of caraway; attains full boiling point at 224° C. (435.2° F.). Sp. gr. not below 0.91. Diluted with an equal quantity of alcohol, it is rendered pale-violet or reddish by a drop of solution of ferric chloride. Ten parts of the oil mixed with 8 parts of alcohol and 1 part of water of ammonia, when saturated with hydrosulphuric acid gas, congeal to a white crystalline mass.

Oleum Caryophyllorum. Oil of Cloves.

The volatile oil of cloves; spec. grav. 1.041 to 1.060, of yellowish to brownish color, a sharp aromatic odor and taste; not reddening litmus paper. When shaken with an equal quantity of water of ammonia of sp. gr. 0.930 or less, and kept cold, it congeals to a soft, yellow, crystalline mass. A drop of the oil spread over the inner wall of a glass vessel assumes a blue or violet color if vapor of bromine is allowed to fall in the glass. A drop of the oil dissolved in 4 *gm.* of alcohol is colored blue by one drop of a mixture prepared by diluting solution of chloride of iron† with 20 times its weight of water. Hot water shaken with the oil should not assume an acid reaction. After cooling, the clear filtered water is not colored blue or green by one drop of solution of ferric chloride, but assumes a yellow color on addition of lime-water. The oil should be soluble to a clear liquid in an equal or larger quantity of diluted alcohol (sp. gr. 0.892 to 0.896).

Oleum Cinnamomi. Oil of Cinnamon.

The volatile oil of cinnamon, the aroma of which it possesses. A yellow or brownish liquid of spec. grav. 1.055 to 0.165, miscible to a clear liquid with alcohol in all proportions. Four drops of the oil shaken with 4 drops of fuming nitric acid unite with the latter, without heating, to crystalline needles or scales. If four drops of the oil are diluted wsth 10 *cc.* of alcohol, 1 drop of solution of ferric chloride may produce a brown, but should not produce a green or blue color. Water shaken with oil of cinnamon has a sweet, afterwards burning and spicy taste.

Oleum Citri.
[*Oleum Limonis.*] Oil of Lemon.

The volatile oil of the fruit of *Citrus Limonum,* prepared without distillation from the fresh peel of the fruit. It is pale-yellowish, has a fine lemon odor, and is not in all proportions miscible with alcohol to a clear liquid. 1 drop of the oil, when rubbed with sugar and then shaken with 500 *gm.* of water, should impart to the latter the taste of lemons.

On heating the oil in a retort until it begins to boil, no alcohol should pass over.

Opium. Opium.

The spontaneously inspissated milk juice obtained by incisions in the capsule of *Papaver somniferum.* A brown, internally homogeneous mass, at first of a soft consistence, but becoming brittle when perfectly air-dry. The opium cakes are wrapped in poppy leaves, which are usually covered with the fruits of a species of Rumex. Opium has a narcotic odor, and a sharp, bitter and burning taste.

Before use, it should be sliced, and, if necessary, dried at a temperature not exceeding 60° C. (140° F.), until it can be reduced to powder. When tested by the following method, the powder should yield at least ten per cent of morphine:

Mix 8 *gm.* of powdered opium with 80 *gm.* of water, shake thoroughly, and filter after twelve hours. Take 42.5 *gm.* of the filtrate, add to it 12 *gm.* of alcohol, 10 *gm.* of ether, and 1 *gm.* of ammonia, and let the mixture stand, in a stoppered bottle, for twelve hours at a temperature of 10°–15° C. (50°–59° F.), repeatedly agitating. Then transfer the contents of the bottle to a small filter measuring 80 millimetres (3⅛ inches) in diameter, which has been dried at 100° C. (212° F.), and then weighed. The crystals of morphine remaining after the liquid has run off are washed twice with a mixture of 2 *gm.* of diluted alcohol (sp. gr. 0.892–0.896), 2 *gm.* of water and 2 *gm.* of ether, and dried in the filter at 100° C. (212° F.). Their weight should be at least 0.4 *gm.*

The morphine thus obtained, when shaken with 100 parts of lime-water, should be dissolved after a few hours to a yellowish liquid, which becomes permanently browned by the gradual addition of chlorine water, and is colored blue or green by solution of ferric chloride.

Pepsinum. Pespin.

A fine white powder, not hygroscopic, almost odorless and tasteless, and not soluble to a clear liquid in water. The addition of 2 drops of hydrochloric acid to the solution renders the latter clearer. 0.1 *gm.* of pepsin, dissolved in 150 *gm.* of water and 2.5 *gm.* of hydrochloric acid, should dissolve 10 *gm.* of albumen, previously boiled and cut in pieces of the size of lentils, to a faintly opalescent liquid, when repeatedly and briskly shaken with it during four or six hours at a temperature of 40° C. (104° F.).

Podophyllinum. Podophyllin.

Podophyllin, precipitated by water from the alcoholic extract of the rhizome of *Podophyllum peltatum,* is a yellow powder, or a loose, friable mass of yellowish or brownish-gray color, appearing amorphous under the microscope.

At 100° C. (212° F.), podophyllin gradually turns darker, without melting, and, when shaken with water, furnishes a neutral, bitter, and almost colorless filtrate, which is colored brown by ferric chloride. Solution of subacetate of lead produces in the filtrate a yellow color and very faint opalescence; after a few hours, reddish-yellow flocculi are separated.

Podophyllin is soluble in 100 parts of water of ammo-

* Whenever *alcohol* is mentioned, it is understood to have the spec. grav. 0.830 to 0.834.
† Wherever this occurs, it is understood to have the spec. grav. 1.280 to 1.282.

nia to a yellow-brown liquid, which may be diluted with water without becoming turbid. On neutralizing the ammoniacal solution, brown flakes separate In 10 parts of alcohol, podophyllin dissolves to a dark-brown liquid, from which it is precipitated by water in brownish-gray flakes. In ether, it is only partly soluble; still less so in disulphide of carbon.

Pulvis Ipecacuanhæ Opiatus. Dover'sches Pulver.
[*Pulvis Ipecacuanhæ et Opii.*] Dover's powder.

Opium, *one part* ..... 1.
Ipecacuanha, *one part* ..... 1.
Sugar of milk, *eight parts* ..... 8.

Mix them in a state of fine powder.

[The use of sugar of milk in this preparation was advocated several years ago, for the United States Pharm. (see *Report on the Revision*, etc , by Chas. Rice, New York, 1880, p. 115). It was adopted by the Committee of Revision more than a year ago, and will appear so in the new Pharmacopœia.]

Pulvis Salicylicus cum Talco. Salicylstreupulver.

Title first proposed was *Pulvis contra sudorem pedum* = "powder against foot-sweat." It ought rather to be called *Talcum salicylatum*. This is introduced specially with a view to military uses, for soldiers. The new Pharmacopœia is to make a special military pharmacopœia unnecessary.

Salicylic acid, *three parts* ..... 3.
Wheat starch, *ten parts* ..... 10.
Talc, *eighty-seven parts.* ..... 87.

Mix to a fine powder.

Radix Ipecacuanhæ. Ipecac.

The root-branches of *Psychotria Ipecacuanha* (Cephaëlis Ipecacuanha). They are vermicularly curved, up to 15 *cm.* (6 inches) in length, not more than 5 *mm.* (nearly ¼ inch) thick in the middle, thinner towards either end, and mostly unbranched. The gray or brownish-gray bark is densely and rather regularly annulated, whitish internally, of a granular fracture, with a thin, light-yellowish, easily separated woody centre. Odor musty, taste disagreeably bitter.

If the bark be shaken with five times its weight of warm water, and the liquid filtered after one hour, a copious, amorphous, and white precipitate is produced in the filtrate by the addition of a small quantity of a solution of 0.332 *gm.* of iodide of potassium and 0.454 *gm* of red iodide of mercury in 100 *gm.* of water. If 0.2 *gm.* of ipecac be shaken with 10 *gm.* of hydrochloric acid [sp. gr. 1.124], the filtrate becomes blue on addition of iodine water, and turns fiery-red if chloride of lime be sprinkled upon it.

Saccharum Lactis. Milk-sugar.

Whitish crystals, or a white crystalline powder, soluble in 7 parts of water at 15° C. (59° F.), and in 1 part of boiling water, to a faintly sweet, not syrupy liquid. On adding 0.2 *gm.* of sugar of milk to a boiling solution of 4 *gm.* of carbonate of sodium in 4 *gm.* of water, the liquid turns yellow. On now adding 0.2 *gm.* of basic nitrate of bismuth, the latter turns black if the boiling be continued five minutes longer. In a hot mixture of 4 *gm.* of solution of subacetate of lead and 2 *gm.* of water of ammonia, 0.2 *gm.* of sugar of milk produce a precipitate, which should be pure white, not reddish. If 0.2 *gm.* of sugar of milk be sprinkled upon 1 *gm.* of sulphuric acid spread out on a flat surface, not more than a reddish, but no brown-black color, should appear after the lapse of one hour.

Sal Carolinum factitium. Artificial Carlsbad Salt.

Sulphate of sodium, anhydrous ..... 44 parts.
Sulphate of potassium ..... 2 "
Chloride of sodium ..... 18 "
Bicarbonate of sodium ..... 36 "

Mix them to a fine powder. 100

Six *gm.* of the salt, dissolved in 1 liter of water, furnish a liquid resembling genuine Carlsbad water.

Secale cornutum. [Ergota.] Ergot.

The description is followed by the direction: "Powdered ergot should be used only after complete exhaustion by ether."

This phrase—verbally translated—is ambiguous. The intention undoubtedly was to permit the keeping of ergot in the state of *powder*, provided it was deprived of its oil, immediately or soon after being powdered, by means of ether. It has, namely, been shown lately that the removal of the oil prevents the deterioration of the powder by long keeping. As the sentence stands, it might be interpreted that "powdered ergot—no matter how old—should not be used medicinally until the fat has been extracted by ether, perhaps just previously to its being used."

Spiritus. Alcohol.

A colorless, clear, volatile, neutral liquid, readily inflammable, burning with an almost non-luminous flame, having a peculiar odor and burning taste.

Spec. gr. 0.830 to 0.834, corresponding to a strength of 91.2 to 90% by volume, or 87.2 to 85.6% by weight of absolute alcohol.

Alcohol should be miscible without turbidity with water in all proportions. If 50 *gm.* are evaporated, with addition of 10 drops of solution of potassa, to about 5 *gm.*, and the residue is supersaturated with diluted sulphuric acid, no odor of fusel oil should be developed. If 1 volume of alcohol is carefully poured on top of 1 volume of sulphuric acid, in a test-tube, no rose-red zone should be formed between the two liquids. If 10 *gm.* of alcohol be mixed with 20 drops of solution of permanganate of potassium, the red color should not change to yellow in less than twenty minutes. Alcohol should not be colored by solution of hydrosulphuric acid, nor by ammonia, nor should it leave a residue on evaporation.

Tincturæ. Tinctures.

Unless otherwise directed, tinctures should be prepared by pouring the menstruum upon the finely cut or coarsely powdered substance, and macerating in a close flask, in a shady place, at a temperature of about 15° C. (59° F.) for one week, with repeated agitation. The liquid is then separated by straining, or, if necessary, by expression, and when it has settled, filtered. During filtration, loss by evaporation is to be avoided as much as possible.

Tinctura Opii Crocata. Tincture of Opium and Saffron.

Powdered opium ..... 30 parts.
Saffron ..... 10 "
Cloves ..... 2 "
Cinnamon ..... 2 "
Diluted alcohol ..... 150 "
Water ..... 150 "

A tincture of dark yellow-red color, pure yellow when diluted, having the odor of saffron, and a bitter taste. Spec. grav. 0.980 to 0.984.

[We quote this formula chiefly on account of the process of assay.]

One hundred *gm.* contain the soluble parts of ten *gm.* of opium, or approximately one *gm.* of morphine.

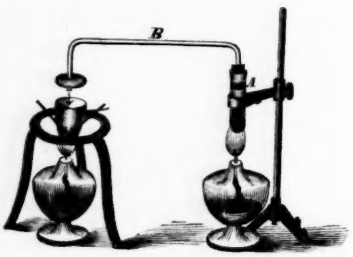
Assay method: Weigh forty *gm.* of the tincture with ten *gm.* of ether and one *gm.* of water of ammonia in a flask, shake the contents thoroughly, then insert the stopper, and set aside for twelve hours at a temperature of 10°–15° C. (50°–59° F.), repeatedly shaking. Then pour the contents of the flask upon a small, tared filter, eighty *mm.* (three and one-eighth inch) in diameter, wash the crystals of morphine, left after the liquid has passed through, twice with a mixture of two *gm.* of diluted alcohol, two *gm.* of water, and two *gm.* of ether, and dry them with the filter at 100° C. (212° F.). The weight of the morphine should not be less than 0.38 *gm.*

Mr. Fried. Jul. Kauffmann, for fifty years a member of the well-known firms of E. Sachsse & Co., Leipzig (branches: Brückner, Lampe & Co., Leipzig; and Lampe, Kauffmann & Co., Berlin), has retired from business.

Rapid Incineration of Organic Substances.

A CONTRIBUTOR to the *Pharmaceutische Centralhalle* (1882, No. 17) communicates a very simple but apparently effective method to incinerate organic substances more rapidly than has been possible to do, even when the ignition was hastened by the use of nitrate of ammonium.

The new method consists in conducting a current of oxygen upon the ash while in a state of ignition; and the apparatus shown in the cut is used for the purpose. The test tube *A* contains some chlorate of potassium and black oxide of manganese, and is heated over a spirit-lamp (or gas flame). The evolved oxygen is carried by the tube *B* through the cover of the crucible into the latter. The upper part of the test-tube contains a little glass-wool to prevent any solid particles from being carried over.



A Simple Combustion Apparatus.

When using the apparatus, the crucible is first heated to a low red heat; after a while, heat is applied to the test-tube. As soon as oxygen passes over, the combustion becomes energetic, and the ash will soon be left white. It need only be cooled under the desiccator, and may then be weighed.—*Pharm. Centralh.*, No. 17.

Methyl Violet Test-Paper.

BY T. O'CONNOR SLOANE, A.M., PH.D.

SEVERAL years have passed since it was first proposed to used methyl violet as an indicator or test for mineral acids in the presence of organic acids. Since it has also been used as a coloring matter for test-paper, it occurred to me that a few notes on the preparation and use of the paper would be of interest.

I tried solutions of methyl violet of different strength in dyeing paper. A solution of one part of violet in four thousand parts of water was found to be sufficiently strong. A solution of double this strength gave a very good color.

Using paper dyed with the first solution I performed the following experiments:

One *cc.* concentrated hydrochloric acid was mixed with 100 *cc.* of water. The acid was of sp. gr. 1.197, corresponding to about 40 per cent acid; the solution, therefore, was of four one-thousandths strength or four-tenths of one per cent.

A piece of paper dipped in this solution did not show the reaction except on drying; then it came out perfectly. A piece made from a violet solution of half the strength showed a little; this acid seemed, therefore, to be close upon the limits of sensibility for an immediate reaction.

It will also be noticed that the more weakly colored paper was slightly more sensitive; on drying, the darker paper shows as well or better.

The acid was diluted to one-fifth its former strength or eight-hundredths of one per cent. I now adopted the following way of operating: a convex cover was placed on a water-bath, the water in which was heated to boiling; each piece of paper, as dipped, was laid on the upper convex surface of the cover; this dried it in about one minute; in practice this will be found an excellent way of using the paper.

The standard paper dipped once and dried showed the reaction, but not strongly; a second dipping and drying brought it out perfectly; a third treatment made the reaction still stronger.

When a paper colored by this weak acid was dipped a second time, the previous change of color was indiscernible until it had dried again.

The acid was reduced to four-hundredths of one per cent; the paper just showed the reaction after one dipping and drying; a second treatment developed it perfectly.

The acid was next reduced to two-hundredths of one per cent strength; the reaction appeared after three to five treatments, but very faintly.

About the same results we obtained with sulphuric acid of corresponding strengths.

The series of experiments indicates pretty closely the limits of sensitiveness; drying the paper cannot be too strongly insisted upon; independent of any concentration of acid thus effected, the color change, which is masked to a great extent by moisture, is made visible by drying.—*Journal of Am. Chem. Soc.*, iv., 31.

A New Reagent for Nitrous Acid.

BY DR. A. JORISSEN.

IF nitrous acid is allowed to act upon an alcoholic solution of rosaniline, the liquid, according to Max Vogel, is colored at first a splendid violet, then a fine blue, which passes into a dark green, then into a yellowish-green, and ultimately into a reddish-yellow.

Although other chemists who have been engaged with researches on the constitution of rosaniline have made similar observations to those of Vogel, it does not appear that any one has proposed to apply this reaction to the detection of nitrous acid. Rosaniline, may, however, be used for the detection of traces of nitrous acid, but it is advisable to use a solution in glacial acetic acid in preference to one in alcohol.

If we dissolve 0.01 grm. magenta in 100 *cc.* glacial acetic acid, and if 2 *cc.* of the solution are placed in a small porcelain capsule, and a trace of solid potassium nitrate be added, the phenomena described by Vogel may be observed. The liquid turns successively violet, blue, green, and finally yellow. The nitrates are without action upon the reagent. If there be added to the test-liquid free mineral acids, the mixture takes finally a yellow color, but this is due to the formation of a tri-acid salt of rosaniline, and the characteristic red color of rosaniline can be reproduced by the addition of water. When the change of color has been occasioned by nitrous acid the original color cannot be restored by the addition of water, but the liquid remains yellow.

If it is desired to detect a nitrite in a liquid it is concentrated, or by preference evaporated to dryness. When cold, a suitable quantity of the reagent is added, when the characteristic play of colors is produced if a nitrate be present. The evaporation to dryness serves to render the reaction more sensitive, as it succeeds better the more concentrated the acetic acid.

In searching for minute traces of nitrous acid the quantity of magenta dissolved in the glacial acid may be proportionately decreased by, *e. g.*, mixing 1 *cc.* of the reagent as described above with 9 *cc.* of glacial acetic acid.

The author has shown experimentally that the new reagent may be used for the detection of nitrous acid in natural waters in Fresenius's method of distilling with glacial acetic acid. For this purpose 1 *cc.* of a solution of 0.5 *gm.* potassium nitrite in one liter of water was added to 100 *cc.* of water. This liquid, which contained 0.0005 *gm.* of the nitrite, was mixed with acetic acid and introduced into a small retort connected with a receiver containing a mixture of 9 *cc.* glacial acetic acid and 1 *cc.* of the test liquid (the solution of 0.01 *gm.* magenta in 100 *cc.* glacial acetic acid). A few drops of the distillate sufficed to produce the above-described change of colors in the receiver.—*Chem. News* from *Zeitsch. f. Anal. Chem.*

General Hints to the Dispenser.*

As quickness and despatch are generally considerations in pharmacy, it is advisable to keep some of the more frequently prescribed salts in solution; and a few hints as to the most convenient strengths of these solutions may not be out of place here. Bicarbonate of potash, 1 oz. (troy), dissolved in enough distilled water to measure 4 oz., makes a very suitable stock solution, as ½ oz. of it contains 1 drachm or 60 grs. of the salt. Chlorate of potash, 1 in 24, made in the same way, is the best strength to suit all variations of temperature. The salt is soluble in a smaller quantity of water, but is apt to crystallize with changes of temperature. Epsom salt, 1 in 2; bromide of potassium, 1 in 3; and chloral hydrate, 1 in 1, make very convenient solutions, the latter particularly so, as each minim represents 1 grain of chloral, and it is stable and easily calculated.

Some of the official pill masses become very hard on keeping, and get so brittle as to be unmanageable; they may, with great advantage, be kept in the dry state, the powdered ingredients being mixed together, so that the menstruum ordered by the pharmacopœia to give consistence, may be added at the time of dispensing. In this way, pil. colocy. co., pil. aloes barb., and socot., pil. aloes et ferri, and pil. Plummeri may be kept with the required proportions of the requisite menstruum marked on the bottles in which they are contained. This plan is often a great help if the physician happens to order too soft a mass.

Mistura ferri co. can also be kept in a concentrated form, so that every drachm will contain the constituents of an ounce of the mixture, except the sulphate of iron, which is to be weighed out and added the last thing before dispensing. Mist. cretæ can be easily kept in powder, ready for the addition of cinnamon water.

The use of concentrated infusions and decoctions, so often employed by pharmacists, is to be condemned. These preparations should be always made fresh as required. It cannot be too strongly impressed upon the student's mind that substitution should never be practised.

Often the dispenser will be at a loss to understand the meaning of the prescriber, when he orders some preparations out of their official names, and he then must have a consultation, or fall back upon the experience of himself or others. A few examples may be given: When magnes. calc. is ordered, magnesia should be used; when magnes. carb., the heavy preparation is usually intended, when bismuth or bismuth alb. is prescribed, the subnitrate is the preparation generally in the mind of the physician; when aqua menth. is ordered, aq. menth. pip. should not be used, but aq. menth. sativ. is the intention of the prescriber. [?]

Liq. morphiæ is very often written in a prescription, and the dispenser will do well to always employ liq. morph. mur. B. P. (½ grain in 1 fl. oz.). When extract. aloes is written, the rule should be to use the socotrine.

Much confusion unfortunately exists in the memory of some prescribers about the mercurial chlorides, and fatal consequences have resulted. The subchloride is often written hyd. chlor., hyd. mur., hyd. submur., and the perchloride is occasionally prescribed as hyd. chlor. or hyd. bichlor.

If the dispenser find it impossible to consult the physician in such cases, he will not regret giving the subchloride, if more than ¼ grain is ordered in each dose.

When the physician orders salts, like pot. iod., or roots, like gentian, with directions for their solution of infusion by the patient himself, the dispenser should destroy their identity by the pestle before sending them out. Quinine, for the same reason, if ordered in a mixture without a solvent, should be carefully triturated till the crystals are broken up.

When the pharmacist gets a prescription where incompatible substances are ordered, it it clearly his duty to compound it, unless absolutely incompatible, in which case the different ingredients will not mix, and, then, if possible, he should consult the prescriber. Instances of such might be given to fill a large volume, and unfortunately no rule can be laid down for the guidance of the young dispenser, as it is still an open question with pharmaceutical authorities whether a compounder is justified in altering a prescription, suppose he find the emulsifier or pill excipient ordered by a medical man unsuitable. Much will depend upon his knowledge of, and his relation to the prescriber; but where a consultation is impracticable, the dispenser must rely upon his past experience.

Perhaps the greatest difficulty will be met with in the case of pills. A commonly ordered pill is one containing 2½ grs. of sulphate of iron, and 2½ grs. carbonate of potash. Any liquid added to this would promote decomposition, and experience proves that a little vaseline and cacao butter make an excellent excipient. Iodide of potassium is often ordered in pills, and may be made up by rubbing the salt with a few drops of water into a stiff, smooth paste, and working it into a good mass by the addition of a little licorice powder; in this way, six grains may be easily got into a fair-sized pill. The proportions of water and licorice are not given, as they entirely depend upon the samples of iodide, which vary considerably in their suitability for making pill mases.

Phosphorus is occasionally ordered to be made into a pill, *secundem artem*, that is, in whatever way the dispenser thinks best. It should be dissolved in bisulphide of carbon, and whilst solution is being effected, two or three drops of chloroform may be added, which produce a heavy vapor around the solution, and prevent the oxidation of the phosphorus by the atmospheric oxygen. A little licorice powder may now be added, and the mass quickly made into a workable form with tragacanth paste, divided into pills and coated.

Carbolic acid (Calvert's pure crystalline) may be easily made into pills with wheaten flour, in the proportions of 1½ grs. flour to 2 grs. of acid.

Permanganate of potash can be made into pills with cacao butter.

Camphor, after being powdered with a few drops of spirit, makes a nice mass with tragacanth paste. Three grains of powdered acetate of potash may be made into a suitable pill with Canada balsam, and will remain stable.

Powdered pill or extract of colocynth may be easily worked into a mass with a few drops of decoction of aloes.

Croton chloral should not be treated with the tragacanth paste, which dissolves it, and causes the pills so made to flatten. It is best worked up with a little confection of hips and thick mucilage.

Sulphide of calcium, now much ordered for acne, should be mixed with an equal quantity of sugar of milk, and after careful trituration, as much powdered decorticated licorice root added as will make the weight up to say a grain or more. The mass can now be easily worked up with a little tragacanth paste. Sugar of milk makes the best powder to aid the subdivision of an active substance, and the powdered decorticated root of licorice is the best inert powder for making up pill mases, as it is so fine and impalpable that it does not make a crumbly pill like powdered gentian.

Citrate of iron and quinine makes a good pill with the tragacanth paste, but it will not remain hard as the salt is deliquescent.

Copaiba can be made into firm pills, which keep their shape, by adding a very small quantity of carbonate of magnesia to it. Powdered rhubarb makes a good mass with one-fifth its weight of glycerin. Gallic acid, 5 grs., and glycerin, ½ drop, make a good pill. Four parts of quinine and one of tartaric acid, with q. s. of tragacanth paste, make a very excellent mass.

Chlorate of potash and hypophosphite of lime rubbed together explode, and may cause injury to the dispenser.

Creasote, if ordered with oxide of silver in a pill, will explode unless the oxide be first diluted by trituration with some inert powder, like licorice or gentian, before adding the creasote.

* From Dr. Whitla's "Elements of Pharmacy, Materia Medica, and Therapeutics." [We have not altered the author's nomenclature.—Ed. N. R.]

Borax, powdered and rubbed up with mucilage, forms a soft powder like moist sugar, which cannot be made liquid by the addition of any further quantity of mucilage; and acetate of lead, similarly treated, makes an opaque white jelly.

Spirit of nitre will generally require to be neutralized with bicarbonate of potash before being compounded with bromide or iodide of potassium, otherwise free Bromine or Iodine will be liberated, and the mixture darkened.

Subnitrate of bismuth is often ordered in a mixture with bicarbonate of soda, and unless very great care is taken in compounding them, by permitting decomposition at a gentle heat, carbon dioxide will be produced, and the bottle will burst. This may be prevented by using an equivalent quantity of the subcarbonate of bismuth.

Pessaries and suppositories containing green extracts may be readily made by first rubbing the extract with powdered castile soap to about one-fifth part of the bulk of the whole pessary or suppository, and supplying the remainder of the basis with cacao, when the mass can be worked up like a pill in a mortar, and shaped by the fingers, or thrust into moulds previously dusted with powdered starch.

Chloral hydrate can be made into a suppository by digesting it on a water-bath in cacao butter, in which it is soluble.

In conclusion, it may be mentioned that, when a prescription is repeatedly compounded, the patient often asks for the dose to be increased, or some other change to be made, and the dispenser is warned not to accede to such a request, no matter how simple it may appear, without a consultation with the prescriber; nor is it advisable for him to inform the patient (even when pressed) of the ingredients in any prescription. He can refer them to the physician, or do as the writer has done long ago when it was impossible to avoid such a revelation—read it in full Latin to the patient. It need hardly be mentioned that, in the case of repetitions of medicines of all kinds, they should invariably be dispensed in fresh bottles or vessels, and have new labels attached in every instance, though old ones may seem scarcely soiled. Breach of this law is certain to soon get the dispenser into dispute.

Dialyzed Iron.

DR. C. SCHACHT, of Berlin, communicates the following process, as being more "commodious" than most of those previously proposed.

Dilute 485 parts of solution of chloride of iron (spec. grav. 1.480–1.484) with 4250 parts of distilled water, and pour the liquid, while stirring, into 580 parts of water of ammonia (spec. grav. 0.960) previously diluted with 2,500 parts of distilled water. Collect the precipitate upon a linen strainer, wash it completely, press it carefully, then add 60 parts of hydrochloric acid, and, after three days, dilute it gradually with distilled water until it has the specific gravity 1.046 at 15° C. (59° F.). The product contains 5% of ferric oxide.

It should be clear, brown-red, odorless, and of a faintly astringent taste.

One part of it, diluted with 19 parts of distilled water, and treated with 1 drop of nitric acid and 5 drops of tenth-normal solution of nitrate of silver, should show no reaction for chlorine, when observed by transmitted light. Five *gm.*, evaporated to dryness, should leave a residue of ferric oxide which, after ignition, weighs 0.25 *gm.*

The dialyzed iron thus obtained is *entirely* identical with that obtained by dialysis.

If the percentage of iron is to be determined, the residue left on evaporation must be ignited. 4.1765 *gm.* yielded 0.2085 *gm.* of ferric oxide = 4.99 per cent.—*Pharm. Zeit.*

Castor-Oil Pomade.

	Parts.
Castor oil	630
Vaseline	170
Yellow wax	100

Melt the vaseline and yellow wax together, add the castor oil, and perfume to fancy.—*Pharm. Centralh.*

Changes which Lemon Juice Undergoes.

I. MACAGNO has made numerous determinations of the acidity of lemon juice and of the amount of citric acid (by Warington's method) in it in various conditions. He finds that the alcoholic fermentation which takes place, when freshly expressed lemon juice is kept, does not diminish the amount of citric acid present, but that this is succeeded by another fermentation during which bacteria make their appearance; this causes the amount of citric acid to diminish and the proportion of other acids—chiefly acetic and propionic—to increase. In like manner, juice expressed from fruit which is partly rotten contains other acids besides citric acid, sometimes as much as ten per cent of the total quantity. Comparative experiments, made by concentrating portions of the same fresh juice over a water-bath and the open fire, showed that in the latter case there is a considerable loss of citric acid, sometimes as much as eight to nine per cent of the whole; but if the juice has undergone the alcoholic fermentation before being evaporated over the open fire, the loss is not so great; at the same time a certain quantity of citrates is formed, so that the acidity, as determined by alkalimetric titration, is less than that which would be produced by the citric acid present if it were all free.

The author considers that the ordinary system of analysis, based on acidimetry, usually gives erroneous results, as either more or less citric acid may be present than is indicated by the acidity. Warington's method of determining the citric acid as calcium citrate, although open to objections from a scientific point of view, is both convenient and sufficiently accurate for commercial purposes.—*Gaz. Chim. Ital.*, 11, 443.

Accidents from Explosions.

A SHOCKING occurrence took place at Wellington, New Zealand, on December 21st last, by which a lady was literally blown to pieces and a building partially wrecked. The facts are as follows: At the shop of Mr. Barrand, chemist, London Quay, some blue fire was in course of preparation for use at the theatre. On testing a small portion of the mixture it was found dangerously explosive, too much chlorate of potash having been inadvertently used in the composition. Accordingly Barrand's assistant, named Anthony, took it out in the back yard, and began to destroy it by slow combustion. He had occasion to leave for an instant, and before he could return, his wife happened to go into the yard, and seeing chemicals on fire, at once threw a bucket of water on the burning mass. A terrific explosion immediately took place, which shook the whole city, and was heard at a distance of some miles. Mrs. Anthony received the full force of the shock, and was frightfully mutilated. Both arms were torn off, also one leg, the lower jaw, and the scalp. Wonderful to relate, she lingered for some time. All the windows in the vicinity were smashed, and other damage done. The stone mortar in which the composition had been mixed was hurled many feet into the air, and thrown clear over the tops of the houses into the next street. Fortunately nobody else was injured. Some points are worthy of special attention in connection with this event. In the *blue* pyrotechnic compound there was possibly some sulphate; but the question to consider is, whether explosion was dominantly due to dissociation to the water or dissociation of the chlorate. The accident suggests the following:

1. A compound dangerously explosive can burn by moderate combustion without explosion.

2. There is every probability that the explosion was occasioned by hydrogen liberated by the instantaneous dissociation of a portion of the water. It will be inferred that such effect was more likely to have been produced from a spray of water than from a large body of water.

3. It is possible that the sudden shock of a comparatively large body of water thrown upon the contents of a small mortar aided to increase the force of the explosion. In other words, the molecular constituents of a salt, being, as

it were, in a state of high tension, or vibration, and almost ready to explode, may be driven to explosion simply by the shock of a liquid thrown upon them. But the violent dissociation of the elements of water thrown upon an ignited mass would itself be a still greater shock.

In Philadelphia, April 13th, a drug clerk compounding a gargle, pulverized separately in the same mortar one ounce of chlorate of potassium and one ounce of tannic acid—the latter an organic acid. In the trituration of the two together, with sufficiency of friction, an explosion could be taken for granted, but an explosion followed by simply pouring the powdered tannin upon the powdered potassium compound. The heating of the mortar in rapid pulverization suggests itself as the cause of the accident and possibly there may have been contact with some dampness.

Some time previous to this, some of the salt had fallen from a full drawer upon the guides supporting a drawer of ferrocyanide of potassium immediately below it, in an Arch street drug store; in pulling out the lower drawer, sufficient friction was caused to result in an explosion, blowing out the drawer violently, and causing considerable damage.

As belonging to the same category of phenomena, we note the discovery in San Francisco of a violent explosive, which is made by grinding together *one* part of trinitrophenol (or picric acid) *one* part of tar, and afterward cautiously adding *five* parts of chlorate of potassium.

Detection of "Bordeaux-Red" in Red Wines.

SEVERAL newly discoverd organic dye-stuffs have already been used for purposes of adulteration. The detection of ordinary aniline colors, as fuchsine, etc., having proved to be so easy, recourse is now had to more stable compounds, which are not so readily detected. Among them is the so-called Bordeaux-red, which belongs to the sulphonic acid series. According to C. Thomas, this may be detected as follows:

Treat 100 *cc.* of the wine with an excess of baryta water, filter from the precipitated sulphate of barium, and precipitate the barium still in solution by carbonate of ammonium. After several hours, filter and ignite the residue left on evaporating the filtrate, until the organic matter is destroyed. [It is best to ignite again with addition of nitrate of ammonium to insure all the sulphur being converted into sulphate.] The ash is dissolved in diluted hydrochloric acid, and this solution filtered. The filtrate is then tested with chloride of barium. A distinct precipitate will be obtained, even if only a small quantity of Bordeaux-red was used. The original paper mentions 0.5 *gm.* of the red in 1 liter of wine, which appears to be quite a large quantity of coloring matter.—From *Chemiker Zeit.*

Determination of Iodine in the Urine of Persons Undergoing the Iodoform Treatment.

THE extensive use of iodoform for surgical purposes at the present day, whereby sometimes as much as 10.20 gr., and occasionally even larger quantities are ingested at a single operation, render it desirable to have a suitable means of determining the amount of iodine excreted in the urine of patients undergoing the iodoform treatment.

C. Bernbeck has obtained good results in the following way:

Two hundred *cc.* of urine are made slightly alkaline with a solution of caustic potash; the whole is then evaporated to dryness, and the residue heated to redness to destroy all organic substances. The ash thus obtained is extracted with boiling alcohol, the extract filtered off and evaporated over a water-bath. The residue is mixed with a few *cc.* of distilled water, a few drops of sulphuric acid, previously saturated with nitrous acid vapors, added, and the whole is then shaken up with a small quantity of carbon bisulphide. The presence of iodine gives rise to the formation of the well-known violet tinge in the carbon bisulphide, and when present in anything more than mere traces its amount may be determined by titration with a solution of palladious chloride of known strength.—*Pharm. Zeit.*, 1882, April 12th.

Testing Olive Oil.

THE following synopsis of the properties and tests of olive oil is taken from Allen's *Commercial Organic Analysis:**

Olive oil has a density of about 917 at 15° C. It boils at 315°. At about 10° C., it deposits a white granular fat; and at 0° it solidifies into a product which can be separated by pressure into a solid tallow-like fat and a fluid oil consisting essentially of triolein. By saponification, olive oil yields glycerin and soaps of oleic, palmitic, and (perhaps) stearic acids.

Olive oil is only slightly soluble in alcohol, but dissolves in about one and one-half times its weight of ether.

Olive oil shows well-defined chlorophyll bands when its spectrum is examined. The bands become changed or altogether destroyed on exposing oil to sunlight or heating it with caustic alkali.

Of the commercial varieties of olive oil, one of the most esteemed is Provence oil. Florence oil is a fine kind employed for culinary purposes. Lucca and Gallipoli oils are well-known brands. Sicily is mostly of inferior quality.

The variations in the quality of olive oil are largely dependent on the manner in which the olives are treated, as, *e. g.*, the care with which the fruit is plucked, the length of time it is stored before being crushed, and other conditions which affect the color, smell, and appearance of the oil expressed. Olive oil varies in color from clear yellow to a deep olive-green, and in smell from that of salad oil to the powerful odor of the inferior varieties.

In some countries, olive oil is an important article of diet. It it extensively employed in the manufacture of woolen cloth and in dyeing fabrics turkey-red. The inferior varieties are employed in soap making. The employment of olive oil for lubricating machinery is decreasing, probably owing to the tendency of the unrefined oil to become acid on account of the fermentation of the contained mucilaginous and albuminous matters.

Owing to its superior value, olive oil is very liable to adulteration. Rape and poppy oils are employed for the purpose, as is also earth-nut oil. A still more common sophistication is by lard oil. "Superfine Lucca oil" often contains 60 to 70 per cent of the last-named adulterant, whilst cotton-seed oil is even more extensively employed. Fish oils are also used for adulterating olive oil.

In examining olive oil, the most important indications are the density, the elaidin test, the rise of temperature on treatment with sulphuric acid, and the color-reactions with soda, sulphuric acid, nitric acid, hydrochloric acid, and chlorine. Certain sophistications require the employment of special tests for their detection.

Fish oils will be detected by the smell on warming the sample; by the red color on heating the oil with solution of soda; by the brown color developed by sulphuric acid, and by the darkening produced on agitating with hydrochloric acid, or passing chlorine.

The specific gravity of olive oil is .917. Any admixture of rape oil will tend to slightly reduce the density, whilst adulteration by other oils (cotton-seed, linseed, etc.) will increase it. Hence, a judicious admixture of rape and cotton-seed oils will not affect the density of the sample.

The rise of temperature on treating the sample with sulphuric acid is a most valuable indication of the purity of olive oil. Almost all oils, except oil of ben and tallow and lard oils, produce more heat than olive oil, so that an excessive rise of temperature may at once be considered as indicating adulteration, and in some cases it allows of an approximate estimation of the extent of the sophistication.

The following table shows the rise in temperature in centigrade degrees, observed by Maumené and Fehling, and confirmed by various others, on mixing a fixed oil with concentrated sulphuric acid (sp. gr. 1.845). Mau-

* The second volume of this important work has recently been published. It is a work which should be on the shelves of every chemist and pharmacist.

mené employed fifty grams of the oil and mixed it with 10 c.c. (or 18.45 grams) of sulphuric acid; Fehling, fifteen grams of oil to five grams of acid.

Nature of Oil.	Rise of Temp. Observed, °C.		
	Fehling	Maumené.	Allen.
1. Olive oil	37.7	42	42
2. Sweet-almond oil	40.3	52½–53½	..
3. Bitter-almond oil (fixed)	..	52	..
4. Colza oil	..	58	..
5. Rape oil (various specimens)	55	57–58	51–56
6. Beech-nut oil	..	65	..
7. Arachis (earth-nut) oil	..	67	..
8. Sesamé oil	..	68	..
9. Cotton-seed oil	..	..	57–60½
10. Poppy-seed oil	70½	74½	..
11. Niger-seed oil	..	..	81
12. Hempseed oil	..	98	..
13. Walnut oil	..	101	..
14. Linseed oil (various specimens)	..	103	108–111
15. Castor oil	..	47	..
16. Lard oil	..	..	41
17. Tallow oil	..	41–43½	..
18. Horse-foot oil	..	51½	..
19. Sperm oil	..	..	45–46
20. Skate-liver oil	..	102	..
21. Cod-liver oil	..	102–103	113
22. Lubricating oil from petroleum	..	..	2½–3
23. Lubricating oil from shale	..	..	4
24. Lubricating oil from rosin	..	..	19

The elaïdin test is another of great value for detecting sophistication of olive oil. Poutet's method of procedure is best for this particular application. Six grams of mercury should be dissolved in 7½ grams of cold nitric acid, of about 1.42 sp. gr. Eight grams of the freshly-made solution are then shaken with 96 grams of the sample of oil, and the agitation repeated every ten minutes for two hours. With pure olive oil a perfectly solid mass of pale-yellow color is produced. With adulterated samples, the elaïdin is orange or dark red, and liquid or imperfectly solid. Not unfrequently a distinct liquid layer is formed on the surface of the solid elaïdin. The above test is applicable to the detection of cotton-seed, poppy seed, linseed and other similar oils, when in admixture with olive oil. Train oil resembles these in not forming elaïdin. Exposure to air is, under conditions, also a test for an admixture of the drying oils.

Sesamé oil, in admixture with olive oil, may be recognized by the cohesion figure produced when a drop of the sample is placed on clean water. It may also be detected by agitating two parts of the sample with one of hydrochloric acid at 1.17 sp. gr. in which 1 decigram of sugar has been previously dissolved. The acid, on separation from the oil, assumes a rose color if oil of sesamé be present, the intensity of the tint increasing with the proportion of the adulterant.

Arachis or earth-nut oil, has about the same density as olive oil, but solidifies somewhat less readily. It may be recognized by its well-marked taste of kidney beans. Olive oil containing a mixture of earth-nut oil, when left at a temperature of 8° C., deposits sandy-looking flocks at the bottom of the glass, leaving a perfectly clear, supernatant liquid, whilst the matter deposited by pure olive oil remains suspended in the fluid.

Earth-nut or arachis oil may be detected and approximately estimated in olive oil by a process devised by A. Renard, which is based on the presence of the glyceride of arachidic acid, $C_{20}H_{40}O_2$, in the adulterant. For the purpose of the test, 10 grams of the sample should be saponified with caustic soda, and the resultant soap decomposed by hydrochloric acid. The fatty acids obtained are next dissolved in 50 *cc.* of hot alcohol of .817 sp. gr., and the warm liquid precipitated by an alcoholic solution of acetate of lead. (Baudrimont recommends direct conversion to lead soaps, by boiling the sample with 5 grams of finely-divided litharge and 100 *cc.* of water. There is a tendency to the formation of a basic oleate of lead, only with difficulty soluble in ether.) After cooling, the lead soaps are filtered off, and treated on the filter with well-washed ether, which dissolves the oleate of lead, leaving the palmitate and archidate unchanged. The residue is treated with hot diluted hydrochloric acid, the liberated fatty acids allowed to solidify and separated from the solution of lead chloride. The cake is next dissolved in 50 *cc.* of rectified spirit, to which one drop of hydrochloric acid has been added. On cooling the solution, abundant crystals of arachidic acid will be deposited if the sample contained earth-nut oil. The liquid is filtered, and the crystals washed with a little rectified spirit, and then with spirit of 0.89 sp. gr., in which they are completely insoluble. The arachidic acid is next treated, on the filter, with boiling absolute alcohol, by which it is dissolved, and the resultant solution is evaporated to dryness and the residue weighed. To the amount thus found is added 0.0025 grams for each 10 *cc.* of rectified spirit used in the crystallization and washing of the acid. The fusion point of the arachidic acid obtained in the above manner is about 71°, that of the pure substance being 73°. Renard obtained from 4.5 to 5.0 per cent of arachidic acid from earth-nut oil. Hence, twenty times the weight of acid found (duly corrected for solubility, as already described) will approximately represent the amount of the adulterant in the 10 grams of the sample employed for the test. The process requires considerable skill to insure accurate results. It proved unsuccessful with a mixture containing less than 4 per cent of earth-nut oil, but with one containing 10 per cent of the adulterant, the result was within one per cent of the truth.

A sample of so-called "green olive oil from Malaga," was found by Cailletet to consist solely of arachis oil, colored with acetate of copper.

A very useful test for olive oil is said to consist in agitating three measures of the oil with one of nitric acid, of 1.32 sp. gr., and observing the color after about one and a half hours. If the oil be pure, or mixed only with lard or castor oil, a transient yellow collor will be obtained; but, in presence of seed oils (*e. g.*, cotton seed, linseed, niger-seed or rape oil), of sperm, seal or whale oil, or of mineral or rosin oil, a red coloration will be developed, varying in intensity with the proportion of the adulterant. With seal and seed oils, the color is more of a reddish orange; with mineral and fish oils, dark-red, and with rosin oil, reddish brown.

According to F. W. and G. F. Stoddart, marine-animal oils and rosin oil are further recognized by the gray or black coloration produced on agitating three measures of the sample with one of hydrochloric acid of 1.16 sp. gr.

Lard oil is the most difficult adulterant to detect in olive oil. Its presence may, however, be deduced from the altered density and viscosity of the sample, and by a very careful application of Chateau's color tests, side by side with genuine samples. This test is made by placing a drop of sulphuric acid in the centre of 10 or 20 drops of the oil; a fine violet color changing to brown is thereby produced in liver oils. The diminished intensity of the absorption bands is also a character of some value.

Oleic acid, due to adulteration with commercial distilled "olein," may be met with in olive oil. It imparts to the sample a rancid taste and a disagreeable smell. The proportion present may be determined by a method based on the solubility oleic acid in alcohol, and its power of neutralizing alkalies.

Intentional adulteration with oleic acid is certain to be practised in considerable proportions. But pure olive oil is apt to acquire slight acidity or "rancidity" by simple keeping, thus becoming unsuited for use as a lubricator.

Hop Cordial (tasting like *Hop Bitters*).

	Parts.
Hops, dandelion, gentian, chamomile, stillingia, orange peel, each	2
Alcohol	64
Syrup	16
Water	76

The Preparation of Syrups for Soda Water.*

In the preparation of syrups, which are solutions of sugar, more or less strong according to the object for which they are used, care should be taken to employ only the best refined sugar, and either distilled or filtered rain water, as they will be rendered much less liable to spontaneous decomposition, and become perfectly transparent without the trouble of clarifying. When, however, impure sugar is employed, clarification is always necessary. This is best done by dissolving the sugar in the water or fruit juices cold, and then beating up a little of the cold syrup with some white of egg, and one or two ounces of cold water, until the mixture froths well; this must be added to the syrup in the boiler, and when the whole is frisked up to a good froth, heat should be applied, and the scum which forms removed from time to time with a clean skimmer. As soon as the syrup begins to simmer it must be removed from the fire and allowed to stand until it has cooled a little, when it should again be skimmed, if necessary, and then passed through a clean flannel. By using refined sugar, however, all this trouble of clarification can be avoided.

When vegetable infusions or solutions enter into the compositions of syrups, they should be rendered perfectly transparent by filtration or clarification, before being added to the sugar.

The proper quantity of sugar for syrups will, in general, be found to be two pounds avoirdupois to every pint of water, or thin aqueous fluid. These proportions allow for the water that is lost by evaporation during the process, and are those best calculated to produce syrup of proper consistence, and possessing good keeping qualities. They closely correspond to those recommended by Guibourt for the production of a perfect syrup, which, he says, consists of thirty parts of sugar to sixteen parts of water.

In the preparation of syrup it is of great importance to employ as little heat as possible, as a solution of sugar, even when kept at a temperature of boiling water, undergoes slow decomposition. The best plan is to pour the water (cold) over the sugar, and to allow the two to lie together for a few hours, in a covered vessel, occasionally stirring, and to apply a gentle heat, preferably that of steam or of a water-bath, to finish the solution. Syrups are sufficiently boiled when some taken up in a spoon pours out like oil, or a drop cooled on the thumb-nail gives a proper thread when touched. When a thin skin appears on blowing the syrup, it is judged to be completely saturated. These rude tests, however, often lead to errors, which might be easily prevented by employing the proper proportions, or determining the specific gravity by immersing in the syrup one of Baumé's saccharometers or syrup gauges, as indicated in the following table:

Sugar in 100 par.	Spec. Grav.	Deg. Baumé.
0	1.000	0
5	1.020	3
10	1.040	6
15	1.062	8
20	1.081	11
25	1.104	13.5
30	1.128	16.3
35	1.152	19
40	1.177	21.6
45	1.204	24.5
50	1.230	27
55	1.257	29.5
60	1.284	32
67	1.321	35

A fluid ounce of saturated syrup weighs 577½ grains; a gallon weighs 13½ pounds; its specific gravity is 1.319 to 1.321 or 35° Baumé; its boiling point is 221° Fahr., and its density at the temperature of 212° is 1.260 to 1.261, or 30° Baumé. The syrups prepared with the juices of fruits mark about two or three degrees more on Baumé's scale than the other syrups. According to Ure, the decimal part of the number denoting the specific gravity of a syrup, multiplied by twenty-six, gives very nearly the number of pounds of sugar it contains per gallon.

The preservation of syrups, as well as of all saccharine solutions, is best promoted by keeping them in a moderately cool, but not a very cold place. Let syrups be kept in vessels well closed, and in a situation where the temperature never rises above 55° Fahr. They are kept better in small than in large vessels, as the longer a bottle lasts the more frequently it will be opened, and the syrup consequently exposed to the air. By bottling syrups while boiling hot, and immediately corking down and tying the bottles over with a bladder, perfectly air-tight, they may be preserved even at a summer heat for years, without fermenting or losing their transparency.

The candying of syrups may be prevented (unless the syrup be over-saturated with sugar) by the addition of acetic or citric acid, two or three drachms per gallon. Confectioners add a little cream of tartar to the syrup to prevent granulation. Syrups may be effectually prevented from fermenting by the addition of a little sulphite of potassa or lime; also by the use of salicylic acid in small quantities. Fermenting syrups may be immediately restored by exposing the vessel containing them to the temperature of boiling water. The addition of a little spirit is also good, say about ten per cent.

A solution of sugar prepared by dissolving two parts of double refined sugar in one of water, and boiling this a little, affords a syrup which neither ferments nor crystallizes.

The basis of most mineral water syrups is simple syrup, which is prepared by adding sixteen pounds finest white sugar and the whites of four eggs to one gallon of water; stir until all the sugar is dissolved; simmer over a gentle heat for two or three minutes; skim well and strain through a fine flannel bag.

The best way to keep fruit syrups from fermenting is by bottling while hot, into suitable bottles or larger vessels, and to prevent access of air. This is the principle, and it may be carried out in various ways. For instance, fill the syrup while hot in quart bottles, previously warmed, and fill them almost full. Cover or cork the bottles temporarily until the syrup cools a little and contracts in volume; then, having heated a small quantity of the syrup, refill the bottles, cork them securely and wax them.

A great variety of syrups are made by the addition of proper flavoring ingredients to simple syrup; but in other cases, especially when the juices of fruits are employed, the syrup is not first prepared and then flavored, but the processes go hand-in-hand. In such instances specific instructions will be given. It is always advisable, when fresh fruit can be obtained, to use it in preference to the essence. One general recipe, which answers for nearly all fresh fruit, is as follows: Use nothing but the very best fresh fruit, which must be freed from stocks, etc., and crushed with a wooden instrument (not metal); when well mashed, let it stand in a room of even temperature (about 68° Fahr.) for four days, which will give sufficient time for fermentation to take place; press out the juice from the fruit and let it settle in a cool cellar for two days, after which five pounds of the clear juice is to be simmered with nine pounds of loaf sugar; while warm, strain through flannel. The color may be improved by a solution of aniline [we do not indorse this.—Ed. N. R.] or other coloring agent.

It is advisable to add to the fresh fruit before setting it for fermentation, about two pounds of powdered loaf-sugar for every one hundred pounds of fruit. When cold it is ready for bottling. Cleanliness should be strictly observed in all the utensils used. When bottling for storing, skim the top off any floating matter from the syrups in the large pan, and see that no residue at the bottom goes into the bottles. Most of the syrups not made from fruit, may have a little mucilage of gum arabic added, in order to produce a rich froth. The following recipes comprise syrups made from the fruit, and also from essences. These may be varied to suit taste and requirements. A variety of syrups have been brought into use by adding the various wines,

* Chicago Confectioner.

such as claret, hock, sherry, etc., to simple syrup; others, by the addition of spirits, as milk punch, by adding to vanilla cream Jamaica rum and nutmeg. Almost any syrup may be made by the addition of a sufficient quantity of flavoring essence to simple syrup; but these artificially prepared syrups are inferior to those made from fresh fruits.

Red Coloring for Soda Water Syrups.—The most convenient is probably tincture of cudbear, as it affords a good, substantial, and natural-looking color miscible with syrups without cloudiness. It may be made as follows:—Two to four ounces powdered cudbear, one pint diluted alcohol. Exhaust by maceration or displacement. Used alone, the tincture gives a shade of red closely imitating the color of raspberries or currants. For deeper red, like blackberries, the addition of some caramel is all that is necessary. The strawberry color is best imitated with tincture of cochineal. *Aniline Red*, owing to its cheapness, is often used for coloring syrups, but it produces a glaring, artificial-looking bluish-red, and is liable to the objection that it sometimes contains arsenic.

Ambrosia Syrup.—A mixture of equal parts of vanilla and strawberry syrups.

Apple Syrup.—Proceed with apples as for pine-apple syrups.

Banana Syrup.—Proceed with bananas as for pine-apple syrups.

Blackberry Syrup.—Prepared from ripe fruit the same as raspberry syrups. Blackberry syrup is improved by adding one ounce best French brandy to each quart.

Capillaire Syrup.—Nine pounds loaf sugar, five pounds orange-flower water. Boil till the sugar has dissolved and the syrup is clear; while hot, strain through flannel; add to the cool syrup two drachms of tartaric acid, previously dissolved in eight ounces of the strongest orange-flower water; lastly add four ounces of the best Rhine wine.

Cream Syrup (2).—One pint condensed milk. One pint water. One and one-quarter pound sugar. Heat to boiling and strain. This will keep for over a week in a cool place.

Cream Syrup—Imitation.—Make an emulsion with three ounces fresh oil of sweet almonds, two ounces powdered gum arabic and two ounces water; then dissolve one pound white sugar by a gentle heat, strain, and when cool, add the whites of two eggs. It should be put up in small bottles, well corked, in a cool place. This is not only an excellent imitation and substitute for cream syrup, but will keep for a considerable time.

Currant Syrup (1).—Six pints simple syrup. Two pints water. Two ounces tartaric acid. Three drachms fruit essence. Mix; color with liquid carmine for red currants, and with burnt sugar, for black.

Currant Syrup (2).—One pint red currant juice. One gallon simple syrup.

Grape Syrup.—One-half pint brandy. One ounce tincture of lemon. One gallon simple syrup. Tincture red saunders, one quart.

Ginger Syrup.—Six pints simple syrup. Two pints water. One ounce tartaric acid. Two ounces ginger. Burnt sugar to color.

Ginger Syrup (2).—Four ounces extract Jamaica ginger. One gallon syrup. Shake well. A few drops of tincture curcuma to color.

Ginger Syrup (3).—Nine pounds loaf sugar. Five pounds water. Twelve ounces essence ginger. Four ounces Rhine wine. Boil sugar and water until dissolved and clear; when cool, add ginger and wine. Mix well and let settle.

Imperial syrup.—Equal parts of raspberry and orange syrups.

Lemon Syrup.—Grate off the yellow rinds of lemons, and beat it up with a sufficient quantity of granulated sugar; express the lemon juice; add to each pint of juice one pint of water, and three and one-half pounds granulated sugar, including that rubbed up with the rind; warm until the sugar is dissolved and strain. Under no circumstances must the syrup be allowed to boil, and the less heat that can be used to effect the complete solution of the sugar the better will be the syrup.

Lemon Syrup (2).—Add to one gallon simple syrup when cold, twenty drops fresh oil lemon and one-half ounce citric acid, previously dissolved in three ounces water; mix by shaking well in a bottle; add four ounces gum solution, made by dissolving two ounces of fine white gum arabic in two ounces warm water.

Lemon Syrup (3).—Six pints simple syrup. Two pints distilled water. Two ounces essence lemon. Two ounces citric acid, dissolved in boiling water. Mix, and, if required, color with saffron.

Maple Syrup.—Three and one-half pounds maple sugar. One quart water. Dissolve, and, if desired, add a small proportion of gum solution to produce a rich froth.

Milk Punch Syrup.—To one pint heavy syrup add one-half pint each of brandy and Jamaica rum; flavor with two teaspoonfuls of an extract prepared by macerating two ounces of ground nutmegs in eight ounces of alcohol. The syrup is first to be poured into the glass in the proper quantity, and ordinary cream syrup added before drawing the soda water.

Mulberry Syrup.—Made from the fruit, the same as strawberry, and acidulated slightly with a solution of citric acid. It may also be made from the fruit essence in the same manner as for strawberry, using about half the quantity of tartaric acid.

Nectar Syrup (1).—One ounce extract vanilla. One ounce extract rose. One ounce extract lemon. One ounce extract bitter almonds. Mix and add one gallon simple syrup; color pink with cochineal.

Nectar Syrup (2).—Mix three parts vanilla syrup with one each of pineapple and lemon syrups.

Orange Syrups.—These may be made from the fresh fruit or from the essence in a similar manner as for lemon syrups. Orange syrups may be colored slightly with tincture of saffron or of turmeric.

Orgeat Syrup (1).—One half pint of cream syrup. One-half pint simple syrup. One pint vanilla syrup. Five drops oil bitter almonds.

Orgeat Syrup (2).—Beat to an emulsion in a mortar eight ounces blanched sweet almonds and four ounces bitter ones, adding a little water; when smooth add three pints water; mix and strain; dissolve in this without heat six pounds sifted white sugar, and four ounces fresh orange-flower water.

An excellent imitation of orgeat syrup is made by flavoring cream syrup, made with eggs and milk, with a few drops of oil of bitter almonds.

Pear Syrup.—Proceed with pears as for pineapple syrups.

Pineapple Syrup (1).—Take a convenient number of the fruit; pare and mash them in a marble or porcelain mortar, with a small quantity of sugar; express the juice; for each quart of juice take one and a half pints of water, and six pounds of sugar; boil the sugar and water, and add the juice; remove from the fire; skim and strain.

Pineapple Syrup (2).—Six pints simple syrup. Two pints distilled water. One ounce tartaric acid. One drachm essence pineapple. Saffron to color.

Pineapple Syrup (3).—Proceed as for raspberry (4); but the hard nature of this fruit requires pounding with a heavy chump of wood (not metal) in a tub with a strong bottom; when well mashed it will require great pressure to extract all the juice from this fruit; a cider press will answer the purpose; add fourteen pounds of sugar to a gallon of juice and a little pure acetic acid; put it on a slow fire, and stir until the sugar dissolves; when cold, bottle and tie down.

Raspberry Syrup (1).—Take fresh berries and inclose them in a coarse bag; press out the juice, and to each quart add six pounds white sugar and one pint of water; dissolve raising it to the boiling point; strain; bottle and cork hot, and keep in a cool place. Raspberry syrup is improved by adding one part of currants to four parts of raspberries.

Raspberry Syrup (2).—Five quarts raspberries. Twelve pounds white sugar. One pint water. Sprinkle some of the sugar over the fruit in layers, allowing the whole to

stand for several hours; express the juice and strain, washing out the pulp with the water, add the remainder of the sugar and water; bring the fluid to the boiling point, and then strain. This will keep for a long time.

Raspberry Syrup (3).—Six pints simple syrup, two pints water, two ounces tartaric acid, two ounces essence raspberry. Coloring sufficient. Coloring for raspberry, blackberry, etc., syrups may be made by boiling one ounce cochineal with half a teaspoonful cream of tartar; filter.

Raspberry Syrup (4).—Take any quantity of fully ripe fruit; free them from the stalks; place them in a tub and crush them with a wooden spatula; after they have been mashed, let them remain for three or four hours, and strain the crushed berries through a strong flannel bag or strainer into a suitable vessel. Dissolve one-half ounce citric acid in three ounces water, and add this quantity to each gallon of juice; mix fourteen pounds broken sugar to every gallon of juice; put on a slow fire and stir until all the sugar is dissolved (not boil); take off the fire and, when cold, bottle and cork for future use. If too thick when cold, it may be brought to a proper consistency by the addition of water.

Raspberry Syrup—Imitation.—Three ounces bruised orris root. Two ounces acetic acid. One ounce acetic ether. One pint of alcohol. Cochineal to color. Mix and allow to stand a few days; filter, and use to flavor simple syrup.

Rose Syrup.—One gallon simple syrup, one ounce essence rose. Color pink with prepared cochineal, and acidulate lightly with a solution of citric acid.

Sarsaparilla Syrup (1).—One gallon simple syrup. Two ounces essence sarsaparilla. Color with caramel.

Sarsaparilla Syrup (2).—One gallon simple syrup. Essence sarsaparilla q. s. One ounce powdered extract licorice. Fifteen drops oil sassafras. Fifteen drops oil wintergreen. Ten drops oil aniseed. Stir the oils with the powdered licorice; add a portion of the syrup; stir smoothly, and mix the whole together by agitation.

Sherbet Syrup.—Mix equal parts of orange, pineapple, and vanilla syrups.

Sherry Cobbler Syrup.—To one pint good sherry add an equal measure of heavy simple syrup, and one lemon cut in very thin slices. Allow the syrup to stand a few hours; strain through a sieve, and bottle for use.

Strawberry Syrup (2).—Proceed as for raspberry syrup (4); but the fruit being more stubborn will require a good beating with the spatula to mash them; when they have stood three or four hours strain and press the juice out by squeezing the strainer between the hands; add to the juice the same quantity of citric acid; dissolve in each gallon fourteen pounds of loaf sugar; simply warm the juice sufficiently to dissolve the sugar; take from the fire, and when cold bottle and cork till required.

Vanilla Syrup (1).—One gallon simple syrup. One ounce extract vanilla. One-half ounce citric acid. Stir the acid with a portion of the syrup; add the extract of vanilla; mix.

Vanilla Syrup (2).—Four pints simple syrup. Two ounces extract of vanilla.

Condition Powder.

	Parts.
Elecampane root, fœnugreek, flaxseed, juniper berries, poplar bark, rosin, mustard, bran, each	4
Licorice root, ginger, sulphate of sodium, chloride of sodium, sulphur, sulphate of iron, each	3
Gentian, carbonate of sodium, each	2
Black sulphuret of antimony, nitrate of potassium, coriander, valerian, each	1
Sanguinaria, lobelia, podophyllum, dried alum, each	½

(This is an imitation of a certain popular "condition powder").—*Stearns' New Idea.*

The Tonga Plant.

MR. M. E. BROWN, of the Kew Herbarium, publishes the following note in the *Gardener's Chronicle* (Feb. 25th):

In consequence of the statement made by me in my note upon the tonga plant,* that *Raphidophora pinnata* was the same plant as *Epipremnum mirabile*, I have received from Mr. Lynch, the curator of the botanic garden at Cambridge, a fine flowering specimen of an aroid that is grown there under the name of *R. pinnata*, but which is in fact the Indian *R. decursiva*, and is quite distinct from the tonga plant. As I have no doubt that *R. decursiva* is also grown at other places under the wrong name of *R. pinnata* (it was so named at Kew a few years back), and cultivators having it so named may fancy they have the tonga plant, a few words upon the most striking distinctions between the two plants may not be out of place.

The tonga plant, *Epipremnum mirabile* Schott (synonyms *Rhaphidophora lacera* Hassk., *R. pinnata* and *R. vitiensis* Schott), is distinguished by having its adult pinnatisect leaves cut down to within about one-half to one-quarter inch of the midrib; the segments are of nearly equal breadth throughout, and have one nerve up the centre of each, which runs out to the apex, without branching, merely giving off slender veinlets, or in the case of two or more segments being united into one, there are two or more nerves in it, as many in fact as there are segments united, but the nerves are quite separate, and run from the midrib to the margin without branching; the leaf is also well characterized by the presence of numerous small perforations and pellucid spots, chiefly scattered along the region of the midrib, which are well seen if the leaf be held up to the light. But in *Rhaphidophora decursiva* the adult leaves are cut into segments right down to the midrib, the segments are broader at their middle than at their base or apex, and the rib of each segment divides into three near its base; there are no perforations or pellucid spots in the leaf.

When in flower, the two plants may be readily distinguished by the structure of the ovary and number of ovules; in *R. decursiva* the ovary is incompletely two-celled, with numerous ovules, whilst in the tonga plant it is one-celled, with only two basal ovules. *R. decursiva* was described and figured some years back in Regel's Gartenflora, vol. xiii., p. 5, t. 423, as *R. dilacerata* C. Koch. On what authority Regel quotes it as *R. dilacerata* Koch I do not know, as I cannot find that Koch has anywhere described it under that name; but I presume that Regel thought it to be the same as *Monstera dilacerata* Koch, and changed the genus without changing the authority for the specific name. As to *Monstera dilacerata*, if any readers of this should possess that plant, I should deem it a favor if they would send me a specimen, as the only specimen I have seen is the type specimen in Koch's herbarium, which consists of a bit of a juvenile stem and a few leaves only, but they are quite different from those of *R. decursiva*, and more like the juvenile form of leaf of the tonga plant.

Preparation of Chlorates.

ON decomposing the product of the action of chlorine on milk of lime with potassium chloride, part of the potassium chlorate, on crystallization, remains in the calcium chloride mother-liquor, and cannot be recovered. Pechiney diminishes this loss by removing the greater portion of calcium chloride previously to the decomposition with potassium chloride. This is effected either by concentrating the solution and crystallizing out or adding lime. It is best to use both methods one after the other. On heating, basic chlorides are obtained, which are separated from the liquor. They contain large quantities of calcium chlorate, and are decomposed by hot water. The solution of calcium chloride and chlorate is then evaporated after the separation of the lime. This mixture is capable of yielding larger quantities of potassium chlorate than the ordinary method. For the preparation of sodium chlorate, sodium sulphate is used, the calcium oxide remaining in solution being separated with soda.—*Dingler's Pol. Journ.*, 242, 454.

* See NEW REMEDIES, June 1882, p. 162.

The Botanical Source of Cinchona Cuprea.

BY JOSÉ TRIANA.

SINCE the publication of my "*Nouvelles Études sur les Quinquinas*," Dr. Hesse has remarked the appearance in commerce of a new bark which differed from those of all known cinchonas in its aspect, density, texture, and color, etc., but which contained alkaloids characteristic of the true cinchonas. Subsequently, Professor F. A. Flückiger, in the *Neues Jahrbuch f. Pharmacie*, xxxvi., 296, stated that the same bark differed considerably from the cinchona barks in its anatomical structure, which he compared to that of Cascarilla magnifolia, and gave to the new bark the name of Cuprea cinchona, on account of the dull coppery tint of its external surface.

During the last few years especially, there have been introduced into Europe considerable quantities of new barks, which have maintained in commerce the name of "cuprea bark," and the importations have been so large that the price of all cinchona barks and of sulphate of quinine have very sensibly lowered.

The chief emporium and centre of exportation of the cuprea bark is Bucaramanga, in the State of Santander, and the tress which yield them are found in abundance in the mountain chain of La Paz, which breaks off from the great eastern branch of the Columbian trifurcation of the Andes, and runs parallel to the course of the Magdalena river, separating it from its affluent, the Suarez. At first, there was only one firm in Bucaramanga which exported the bark, and by keeping secret the use to which the bark was destined, it succeeded for some time in maintaining a kind of monopoly. But attention having been roused by the regular exportation, it at length became known that these barks were considered to be the produce of cinchonas, and were much valued in Europe; from that time an eager search was made for them, and their exportation soon assumed such proportions that the bark market became rapidly overloaded and supplied with sufficient to last for a long time.

The impetus having once been given, the search for cuprea bark was prosecuted in other forests of Columbia, and barks quite equal to those of Bucaramanga were found towards the base of the great eastern branch of the Cordillera of the Andes, and as far as the great plain which extends to the Orinoco, and in the valley of the rivers Meta and Guaviare, affluents of the river Orinoco, and these barks pass in commerce under the same name as those first discovered.

The cuprea bark at present in commerce is, therefore, furnished by two very distinct regions: the one, just described, in the great basin of the river Orinoco, to the south of Bogota, and the other which was the one first explored, in the lower [illegible] he basin of the Magdalena river.

Amongst the numerous cup.. bark. received rom Bucaramanga, or the northern region, there is occasionally found a relatively small quantity, which has been discovered by M. Arnaud to be peculiar in containing in place of quinine a new alkaloid which he has called cinchonamine.

Professor Planchon has also observed that the anatomical structure of the bark containg cinchonamine differs from that of ordinary cuprea bark, and has compared it to that of a *cascarilla*. He concludes that if the cuprea barks have characters in common which place them outside the genus *cinchona*, they also present between themselves such differences that they ought to be considered to form specifically distinct types.

Hitherto, the plant or plants which produce cuprea barks have been unknown to science, although the barks have taken so considerable a place in commerce and in the manufacture of sulphate of quinine. Desiring to fill this gap from a botanical point of view, I made strenuous efforts to obtain in Colombia specimens of the plants yielding the cuprea barks, and my efforts have been in great measure crowned with success. I have just received documents from the two centres of collection above named, which now enable me to determine and classify the trees which furnish the cuprea cinchona, and to establish their botanical nomenclature. This classification, and other facts shortly to be mentioned, raise points which seem to me to be of the highest interest in relation to science, commerce, and the cultivation of cinchonas, and to these points I have now to call attention.

The barks distributed in commerce at the present time under the name of cuprea bark are afforded by two distinct districts. They also belong respectively, at least, to two distinct species which, though nearly allied, are yet different from each other and belong to the genus *Remijia* which comes very near that of cinchona and to the closely allied genus *Cascarilla*. These species are *Remijia Purdieana*, Wedd. (Ann. Sc. Nat. [3], xi., p. 272), a plant formerly discovered by Purdie in the forests of Antioquia, upon the left bank of the Magdalena; and *Remijia pedunculata* Triana (*Cinchona pedunculata* Karsten, "Spec. Select.," i., 53, t. 26).

My identification of the tree from the valley of the Magdalena River is founded upon the only samples that I have received of the cinchonamine-yielding sort, which are identical with those of Purdie. I incline to believe that all the other cuprea barks said to come from Bucaramanga, notwithstanding the difference in their chemical composition noticed by M. Arnaud and the not less remarkable difference in their anatomical structure indicated by M. Planchon, can only be produced by the same botanical species, viz., Remijia Purdieana; inasmuch as (1) the barks containing cinchonamine have been exported to Europe as being those of cuprea; without any distinction being made between them, except in remarking that the trees from which the bark was obtained grow in a warmer locality at a lower elevation than the others, without, however, indicating that they might be different among themselves; and (2) if the trees worked in the northern districts be distinct, the resemblance between the one which is most abundantly exported from Bucaramanga, and which must have been used as a standard of comparison to discover the cuprea bark in the south, would be less than that which exists between *Remijia Purdieana* and *R. pedunculata*, which is very great at first sight.

The difference in the conditions of vegetation where the trees yielding the two kinds of cuprea bark of Bucaramanga grow would suffice, it seems to me, to explain the change in the nature of the alkaloids and the modifications in anatomical structure observed in them. In any case this is a question that I hope I shall be able to solve when samples of the common cuprea of Magdalena, which I am expecting to receive shortly, shall have arrived. But there can be no doubt that if these trees are distinct, they must belong to very closely allied species of the same genus.

With regard to the southern district, I am in possession of specimens gathered at Susumuco, Villavicencio, Papamene and on the banks of the C aviare, etc., localities distant from each other and varyin in elevation above the sea level from 20 to 1,000 meters. Notwithstanding slight variations which cannot be considered as specific characters, all these specimens answer to *Remijia pedunculata* Triana, a species discovered by M. Karsten and myself between Susumuco and Villavicencio, and of which my fellow-traveller has published a description and a fine figure in the "Specimina Selecta."

The two Colombian species of *Remijia* which yield the cuprea barks have, at first sight, a very great resemblance, in habit, in the form, size, and smoothness of the leaves, in their inflorescence, and in their capsules of almost the same size; they are in reality, however, very distinct and are easily characterized.

Remijia Purdieana has the division of the calyx lanceolate-acute, almost linear, and much longer than the tube of the calyx. The stipules are lanceolate-acute and the capsules are also lanceolate.

Remijia pedunculata has the teeth of the calyx small, triangular and almost rounded at the apex; the stipules are obtuse, broad and obovate, and the capsules are shorter than those of *R. Purdieana*, which are elliptic.

The resemblance between the barks of the two species is also very great, and it would be difficult to find characters sufficiently marked to distinguish them. They are both, in fact, hard, very compact, relatively heavy, the inner surface smooth and more or less of a wine-red tint, the epidermis thin or more or less corky, and striated longitudinally. The fracture is not fibrous, as in many cinchonas.

The cuprea bark which yields cinchonamine is, however, heavier and more compact and more filled with red resinous coloring matter, and its fracture generally appears horny.

The yield of quinine from cuprea barks varies between 0 and 2%, according to the conditions of vegetation of the trees, which have not yet been sufficiently studied. In this respect, they resemble the officinal cinchonas. In both cases, it appears that the alkaloids increase in proportion as the trees approach nearer to the upper limit of their zone of vegetation and are better protected by the great forest.

From a chemical point of view, the characteristic and remarkable feature which distinguishes the cuprea barks from the true cinchonas is the absence of cinchonidine, which has been ascertained by numerous analyses made by M. Arnaud, confirming the results obtained by other chemists.

In cuprea barks, quinidine would also be always proportionately more abundant than in other cinchona barks, which would permit the formation of the double salt of this alkaloid with quinine, and would produce, according to Mr. C. H. Wood and Mr. E. L. Barret (*Chemical News*, vol. xiv., p. 6, and *Moniteur Scientifique*, 3d ser., xii., p. 148), the new supposed alkaloid, the discovery of which was almost simultaneous in England by Mr. D. Howard and Mr. J. Hodgkin, on the one part, and by Dr. B. H. Paul and Mr. Cownley, on the other part, under the names of "homoquinine" and "ultraquinine."*

Nevertheless, the existence of cinchonamine, the new alkaloid studied and isolated by M. Arnaud, in certain cuprea barks, remains unquestioned.

The discovery thus made of febrifuge alkaloids in the barks of a group of plants outside the genus cinchona, as defined by me, renders it necessary to reconsider the characters upon which the genus is founded and to estimate its affinities at their true value.

De Candolle constituted his genus *Remijia* from Brazilian plants, which St. Hilaire, in his "Plantes Usuelles des Brasiliens," had referred to the genus cinchona, and which had previously been made known by Vellozo under the name of macrocnemum. These plants are shrubs which grow on the dry and exposed summits of the mountains that extend from north to south of the province of Minas, indicating the presence of iron in the soil, according to St. Hilaire.

According to the same author, they have bitter barks which singularly resemble those of the Peruvian cinchonas, and bear, without distinction, the names of *Quina de Serra* (mountain cinchona) or *Quina de Remijio* (the name of the person who first pointed out to the Brazilians their use as a substitute for the officinal cinchonas).

St. Hilaire, while acknowledging that perhaps the "Quina de Serra" plants were only varieties of one species, yet referred them to three, called *Cinchona Remijiana*, *C. ferruginea*, and *C. Vellozii*, and these have been retained by De Candolle under the new name *Remijia;* but I believe, in fact, that they ought to be considered as forms of one specific type. De Candolle, adopting the idea of St. Hilaire, who had called one of these species *Cinchona Remijiana*, in order to preserve the memory of the surgeon Remijo, to whom is due the use of these plants as febrifuges, gave to his genus the name of *Remijia*. This genus is evidently very near to cinchona, and its affinity has been rendered still more close by the discovery of the cinchona alkaloids in the Colombian species of *Remijia;* but it is clearly distinguished from *Cinchona* by its axillary inflorescence and its capsules dehiscing from above downwards. In the last character, as well as in the analogy of the structure of their barks, the species of *Remijia* approach more nearly to the genus *Cascarilla;* but from this genus they differ in the prominent and remarkable character of the axillary inflorescence, and also by the presence of alkaloids in their barks, which have not hitherto been discovered in the genus *Cascarilla*.

The genus *Remijia* presents, then, characters sufficiently well defined and constant to keep it distinct from the two genera most nearly allied to it, viz., *Cinchona* and *Cascarilla*.

By the chemical composition of their barks, the "remijias" must now take an important place in commerce and in therapeutics by the side of cinchonas, of which they are becoming rivals, which confirms the foresight of Remijo and St. Hilaire. Henceforth the two groups of plants will be coupled together, and as the name cinchona, given by Linnæus to the tree of which the bark cured the Countess of Chinchon, will recall this fact, that of Remijia will preserve an analogous one from being forgotten.

Beside the generic characters which I have defined, the original species of *Remijia*, as well as those subsequently published, have, as De Candolle remarks, "a peculiar stamp which distinguishes them at first sight from the cinchonas, and which consists of a shrubby habit in the leaves, being sometimes in whorls of three, particularly the lower ones, in the branches and inflorescence being covered with a reddish pubescence, and in the quadrified woody capsules." But these distinctions, due to collateral circumstances, diminish in other species, especially in the two Columbian species herein noticed. Their glabrescent foliage, and especially their coriaceous, bipartite and relatively small capsules, give them a considerable resemblance to several of the officinal cinchonas. It is more than probable that it is to this similarity that the discovery of cuprea chinchona, which has undoubtedly been made by persons without scientific qualifications, is due. Perhaps a botanist would have done as I myself did when I discovered *Remijia pedunculata*, and would have refused to admit this tree among those whose barks yield alkaloids, because it could not be ranked among the true cinchonas, and does not correspond in habit with those whose bark abounds in alkaloids.

From the above remarkable facts, there must follow results of the greatest importance to science, cinchona cultivation, commerce, and therapeutics.

From a botanical point of view, several ideas concerning cinchonas, which were considered to be sufficiently established, must be greatly modified. For instance, it has been customary to consider that the presence of alkaloids in cinchona as exclusively characteristic to the plants of the genus as hitherto limited, and there have been those who have gone so far as to say that the chemical analysis might serve to control botanical classification, since alkaloids have never been discovered in the genus *Cascarilla* or in other genera allied to *Cinchona*.

It is also admitted that the trees yielding febrifuge alkaloids, especially those of Colombia, as I have stated in my "Nouvelles Etudes," grow in the elevated regions of the Cordillera of the Andes, where the temperature is mild, with scarcely any cold, and prefer the western slopes of the great eastern branch of the trifurcation of the Andes, the other two branches being almost destitute of them.

Since the number of alkaloid-yielding cinchonas has been augmented by the addition of some species of *Remijia*, these plants, regarded as a whole, offer peculiarities worthy of remark, both as to their habitat and their geographical distribution.

The officinal remijias of Colombia, as at present known, grew under conditions of elevation, soil, heat, and exposure almost the opposite to those which the cinchonas require, and they grow in places only a little above the

* Mr Triana appears to have overlooked the fact that Mr. T. G. Whiffen also made known the discovery of a new alkaloid, to which he gave the name "ultraquinine," and which was probably the same as that referred to by the other observers. (See before, p. 479.) As regards the suggestion that this alkaloid is really a compound of quinine and quinidine, we are still without any evidence in support of its probability, or of the existence of such a compound. —Editor *Pharm. Journal*.

level of the sea, in the basin of the Magdalena River on one side, and in the basin of the rivers Meta, Rio Negro, and Guaviare on the other, without ever reaching the elevated summits of the Cordillera.

For the cultivation of the species yielding febrifuge alkaloids, whether in their native country or elsewhere, a new and much more extended and varied field is now opened up, and enterprises of this kind will be more numerous, and their success more easy and certain. The officinal "remijias" being more hardy, and natives of the lower parts of the mountains, loving warmth and not being affected by drought, will lend themselves more easily to cultivation, and more especially in those intertropical countries where the cultivation of the cinchona would be impossible. The cultivation of the cinchonas in the old world will also be effected in consequence.

As to the commerce in bark, it has already found in the genus *Remijia* new sources of enterprise in the peculiar condition and circumstances of its vegetation, which are, as already remarked, different from those of cinchona, and these may be still further increased by the possible discovery of febrifuge alkaloids in other known species of the same genus, natives of Brazil, Ecuador, and Peru, or in new ones which may yet be found. Probably also investigation will be made of species of other genera allied to cinchona, which have long been overlooked.

I have already remarked that the enormous exportations of cuprea bark that have been made recently, have produced a disturbance in commerce, which has lowered the price of the officinal cinchonas in general and of sulphate of quinine in particular, by the accumulation in Europe of barks intended for the manufacture of sulphate of quinine, and by the temporary stoppage of the exportation of cinchona barks. This paralysis of business is aggravated in Colombia by the temporary neglect of agriculture, the collection of the cuprea bark proving much more lucrative, and also by the stagnation of capital represented by the value of the bark warehoused abroad, and which is usually held as a balance to meet the cost of imported goods. It happens, therefore, that the industry which ought to prove a new source of riches for Colombia, has accidentally become a cause of financial disaster.

It may be hoped that this situation cannot last long, and that by degrees an equilibrium will be established. Commercial men will become more prudent, and what is of more significance, the cuprea barks will be diminished in quantity in proportion as the sources of production, already rapidly undergoing devastation, become more exhausted, and the difficulty in collecting bark becomes greater, as has been the case with the officinal cinchonas.

Finally the investigations of the therapeutical properties of the new alkaloids or compounds of alkaloids discovered in the cuprea barks will present considerable interest. It now appears more than probable that the alkaloids or their compounds have passed unnoticed mixed with sulphate of quinine, in the manufacture of the substance on a large scale.

The following is a list of the species of Remijia:

REMIJIA HILLARII D. C. (Prod., iv., p. 357).—Syn. *Cinchona Remijiana* St. Hil., Pl. us. Bras.; *Cinchona Vellozii* and *Cinchona ferruginea* D. C.; *Remijia Vellosii* and *Remijia ferruginea* St. Hil., l. c.; *Macrocnemum*, Vell.

This species grows in dry and barren places on the mountains of the province of Minas.

R. PANICULATA D. C.

A little known plant; a native of Brazil.

R. CUJABENSIS Wedd. (Hist. Nat. des Quinq.), 93 adn.—Syn. *Ladenbergia cujabensis* Klotsch in Hayne Arzneigewächse, xiv.

This species inhabits forests in the neighborhood of Bahia, in Brazil.

R. BERGENIANA Wedd., l. c.—Syn. *Cinchona Bergeniana* Mart. Walp. Repert., ii., p. 507; *Ladenbergia macrocnemia* Klotsch, l. c.

This species grows on the banks of the Amazon in Brazil.

R. DENSIFLORA, Benth. and Hook., *Lond. Journ. Bot.*, iii., p. 215.

A native of English Guiana.

R. HISPIDA, sp. n. in Herb. Spruce, No. 3,248.

Grows near Esmeralda, on the Orinoco River.

R. TENUIFLORA, Benth., l. c.

A species which is found between Barra and Barcelos, on the Rio Negro, in Northern Brazil.

R. PURDIEANA, Wedd. in *Ann. Sc. Nat.* (3 ser.), xv., p. 272.

This species, which is one of those yielding the cuprea cinchona bark, grows in the forests of both banks of the lower Magdalena, in Colombia, in the Provinces of Antioquia and Santander.

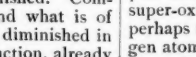
R. PEDUNCULATA, Triana, Nouv. Etudes.—Syn. *Cinchona pedunculata* Karst., Specim. Select., i., 53, t. 26.

This species, which also furnishes the cuprea cinchona of commerce, grows between 200 and 1,000 metres above the level of the sea, on the eastern slopes of the eastern Cordillera, on several affluents of the Orinoco and Amazon Rivers, such as the Rio Mesa, Rio Negro, Guaviare, Papamene, Zarapote, etc.—The *Pharm. Journ. and Trans.*, April 22d.

The Physiological Activity of Super-oxygenated Molecules, especially those of Iodate and Bromate of Quinine.*

BY CHARLES A. CAMERON, M.D.

THE author has come to the conclusion that the bromates and iodates are physiologically more active than the corresponding bromides and iodides. The facts in support of the theories that physiological activity was proportional to high atomic and molecular weights, and was also due to the unsaturated condition on molecules, were considered and criticised. The facts which supported the theory that unsaturated molecules produced a more powerful action upon the system than saturated molecules were more convincing than the facts upon which the other theories rested. The author considered that the term "supra-oxidized" might, for want of a better one, be applied to molecules containing a larger number of oxygen atoms than were requisite to saturate the other atoms present. The iodates, periodates, bromates, and perbromates were composed of super-oxidized molecules. Super-oxidized molecules were perhaps to be properly regarded as unsaturated; their oxygen atoms were as imperfectly saturated as were the carbon atoms in carbon monoxide. In replacing other elements, bromine and iodine invariably act as monads. If they are true monads, then, in such a compound as periodic anhydride, we have two imperfectly satisfied bonds of oxygen—



In the compound KI, each of its two atoms has its unit of equivalence perfectly satisfied by combination with the other atom; the compound is therefore saturated and stable. The addition of four oxygen atoms to KI produces an unsaturated and unstable body, and therefore one likely to be physiologically more active than the stable KI, or KBr, or NaCl.

In 1869, the author introduced the *ferric iodate* ($Fe_2 6IO_3$) as a substitute for the ferrous iodide, and the therapeutic value of the former seems to have been well established. More than a year ago he also suggested the employment of quinine iodate and bromate. These compounds, especially the former, have been largely prescribed by the medical faculty in Dublin, and have been found of great value in sluggish cases of pulmonary congestion, neuralgia, severe articular pains, malarial enlargement of the spleen, and secondary syphilitic disease. The quinine iodate and bromate have been used chiefly in the form of a granulated effervescing preparation, containing two grains of the quinine salt (a dose) per drachm.

Of *iodate of quinine* only very meagre accounts are to be met with in chemical books or journals. The author prepared it by neutralizing freshly precipitated quinine

* *Chemical News*, May 26th.

hydrate with iodic acid dissolved in not less than eight parts of water. The iodate forms in exceedingly minute needles, of pearly lustre, which at 100° C. become yellowish. Dried at 60°, quinine iodate suffers no loss of weight when kept in vacuum over sulphuric acid. The mean result of three determinations showed that it contained 21.8 per cent of iodine. It appears, therefore, to have the following composition: $C_{20}H_{24}N_2O_2,HIO_3$. In accordance with this formula the amount of iodine should be 22.92 per cent; the salt, was, however, very faintly alkaline from presence of a little free quinine. Quinine iodate dissolves freely in spirit of wine and hydrochloric acid, less freely in ether, and sparingly in strong alcohol and chloroform. It is more or less soluble in all the vegetable acids. One part dissolves in seven hundred parts of cold water; strong sulphuric acid merely colors it a light-yellow, and the mixture diluted with water becomes colorless. At 100° C. it undergoes slight decomposition.

Of *quinine bromate* no mention can be found in books or journals. It may be prepared by precipitating barium bromate by quinine sulphate, or by neutralizing bromic acid with quinine. It forms asbestos-like masses, which, under the microscope, are found to consist of very long needles. The salt, when dry, resists the heat of the water-bath, but its solution when evaporated, especially in a platinum dish, leaves a bluish-black residue. It is much more soluble than the iodate, namely, to the extent of one part in two hundred and fifty parts of water. Touched with strong sulphuric acid, it explodes, sends off a puff of smoke, and nearly wholly disappears. It is soluble in hydrochloric, acetic, dilute sulphuric, and other acids; also in spirit of wine, and but very sparingly in ether and chloroform.

Shortly after the administration of quinine iodate, both iodic and hydriodic acids are found in the urine; later on the quinine makes its appearance. The continued ebullition of quinine bromate in water causes the solution to acquire a blue color, exactly like that of indigo. The color is bleached by nitric acid, but is not affected by dilute sulphuric or hydrochloric acid, or by ammonia.

Poisoning Insects in Herbarium Specimens.

BARON THUEMEN highly recommends the following method: Have a box made of rather stout tinned iron, which is a trifle wider and longer than the size of genus-cover used in the herbarium. About one inch from the bottom, a ledge is attached all around the inside; and a tin gutter runs all around the upper edge on the outside. The depth may be adjusted to the requirements of the herbarium; under ordinary circumstances, it need not exceed twenty-four to twenty-eight inches. The box is provided with a cover fitting into the gutter, around the upper edge.

When the box is used, a flat vessel (plate, etc.) is placed in the bottom and filled with disulphide of carbon; a diaphragm of wood or other material is placed upon the ledge, and the specimens of plants, either freshly collected or taken from the herbarium, in their paper covers, laid on top of the diaphragm. The whole box may be thus filled, and it is not necessary to take the plants out of their covers. Finally, the cover is put on, and the gutter filled with water, so as to form a water-joint to prevent the evaporation of the disulphide of carbon as much as possible. The liquid soon volatilizes in the box, and thoroughly penetrates every specimen. Being highly poisonous to the lower animals, it destroys any that may be present, and after a few days, when the cover is taken off, and the plants taken out, they are most effectively "poisoned." The bad odor arising from the fumes of the disulphide is soon lost by evaporation.

Artificial Lemonade.

LOAF-SUGAR, 2 lbs.; tartaric acid, ½ oz.; essence of lemon, 30 drops; essence of almonds, 20 drops. Dissolve the tartaric acid in two pints of hot water, add the sugar, and lastly the lemon and almond; stir well, cover with a cloth, and leave until cold. Two tablespoonfuls to a tumblerful of cold water will make an excellent drink, more refreshing, indeed, say those who have tried it, than either ginger beer or ordinary lemonade, while the cost is very much less. The addition of a very little bicarbonate of potash to each tumberful just before drinking will give a wholesome effervescing drink.—*Scientific American.*

Oleoresin of Male Fern: Increasing its Efficacy against Tape-worm.

ACCORDING to E. Dieterich, the frequent failure of oleoresin of male fern as a remedy against tape-worm is to be ascribed to its irrational administration. It has become known that the popular "worm-doctors," who use almost exclusively the oleoresin of male fern, and who hardly ever meet with a failure, administer the remedy in conjunction with castor oil, instead of following it by the oil after one or two hours, as is usually done by practitioners. The object is to bring the extract, in an unaltered or undigested condition, in contact with the worm. The experiments which have been made by mixing one part of the oleoresin with two parts of castor oil have been very successful, and this mode of administration deserves, therefore, the preference. Oleoresin of male fern is apt to derange the stomach, and when enveloped partly in the oil, is likely to pass it more rapidly, which constitutes another advantage. The mixture has, it is true, an unpleasant taste. This may, however, be disguised by filling it in capsules of about 3 *gm.* (45 grains) each. The dose may be regulated from six capsules (equal to 6 *gm.* or 90 grains of the oleoresin, and 12 *gm.* of castor oil) to seven or eight more, according to circumstances. It is advisable to empty the bowels on the preceding day by a mild purgative, best by castor oil.

Artificially Increasing the Quinine Harvest.

THE following letter has been addressed to the editor of *The Analyst* (May, 1882), by Mr. William Cochran:

"Referring to the singular experiments at present being conducted in Ceylon by a Mr. Schrottky with the object of increasing, by a process of inoculation, the quinine in cinchona bark, I have much pleasure in handing you the following corroborative testimony from my brother, Mr. Michael Cochran, M.A., F.C.S., as to the experimental success, so far, of the suggestion. He writes from Colombo, Ceylon, under date 24th March, as follows: "I have been analyzing some cinchona bark for a chemist named Schrottky, who has been trying to increase the percentage of quinine in the bark of trees about to be cut down, by causing them to absorb certain chemicals. He takes a ring of bark off the tree near the root, applies a solution, then, after about eighteen days, the bark is taken off. I analyzed two sets of samples from the same trees before and after treatment, the sample being taken from the same height in each case; the increase of quinine was marked, while the total alkaloids varied but little.

"Should more extended observations confirm this result, it is hardly necessary to add that the pecuniary advantages likely to accrue to owners of well-grown cinchona plantations in Ceylon and elsewhere will soon prove highly important, and quinine, so necessary a febrifuge in tropical climates, may at no distant date be bought well within the means of even the poorest coolie."—*The Analyst*, May, 1882.

To Remove Freckles.

Oil of almonds, expressed	4 oz.
Lard	3 "
Spermaceti	1 "
Expressed juice of houseleek	3 fl.oz.

Melt the spermaceti and lard together; add the oil and then the juice, and stir the mixture until it solidifies on cooling. A few drops of some perfume, as cologne, may be added.—*Oil and Drug News.*

PHARMACEUTICAL ASSOCIATIONS.

Massachusetts State Pharmaceutical Association.

In accordance with the call issued, the pharmaceutists of the State, to the number of over two hundred, assembled at Horticultural Hall, Worcester, on Wednesday, May 17th, and at 10 o'clock Dr. William Bush, of that city, called them to order in a few words of welcome. Mr. C. H. Price, of Salem, was made temporary President, and J. W. Colcord, of Lynn, temporary Secretary. Mr. Price explained what steps had been taken in the past to secure the gathering present, and what had transpired at the several preliminary meetings.

While waiting for the printed form of constitution and by-laws, Mr. S. A. D. Sheppard, of Boston, was requested to read a paper he had prepared on the Pharmacopœia (see p. 194). The paper was well received, and a vote of thanks given.

The constitution and by-laws were then taken up for consideration. After its adoption, about one hundred and sixty of those present completed their membership; Mr. G. F. Dinsmore, of Worcester, being made temporary Treasurer, and also Local Secretary for this meeting.

At the afternoon session, the election of officers and committees resulted as follows:

President, S. A. D. Sheppard, Boston. *Vice-Presidents*, Wm. Bush, Worcester; H. A. Estabrook, Fitchburg; F. T. Whiting, Great Barrington. *Treasurer*, F. H. Butler, Lowell. *Permanent Secretary*, J. W. Colcord, Lynn. *Local Secretary*, W. P. Draper, Springfield (elected afterward). *Executive Committee*, W. G. Luscomb, Salem; F. M. Pease, Lee; G. E. Fairbanks, Worcester. *Committee on Papers and Queries*, G. F. H. Markoe, Boston; F. H. Macurda, Fitchburg; E. G. Frothingham, Haverhill; W. W. Bartlett, Boston; C. P. Alden, Springfield. *Committee on Trade Interests*, J. J. Estes, Rockland; F. M. Oxley, Ashland; J. A. Gilman, Boston; H. M. Whitney, Lawrence; A. E. Webber, Springfield.

Trustees of Permanent Fund, L. M. Green, Worcester; T. B. Nichols, Salem; A. S. Waitt, Pittsfield.

Delegates to American Pharmaceutical Association, A. Hudson, Newton; T. B. Nichols, Salem; W. F. Sawyer, Boston; F. H. Butler, Lowell; S. C. Tozzer, Lynn.

Delegates to New York State Pharmaceutical Association, Albany, June 20th, E. B. Hamblen, North Adams; F. T. Whiting, Great Barrington; C. E. Ball, Holyoke.

On taking the chair, Mr. Sheppard thanked the Association for their kindness, and congratulated them on the harmony of the meeting which he trusted would be an expression of what the future would also be. He announced a telegram from the President of the Virginia Pharmaceutical Association, a congratulation on the formation of this similar association in the old Bay State; also telegrams of similar import from the Ohio and New Jersey Pharmaceutical Associations, and a letter from the Secretary of the Louisiana Pharmaceutical Association. On motion, the Secretary was directed to respond to each of the organizations, informing them of the success of this day and returning thanks for their kind remembrances.

The President was requested to appoint a committee of fifteen from the several sections of the State to serve as a "Committee on Legislation," with special effort to secure a pharmacy law. He called for names to be nominated by members present, and at a later hour he named the following committee:

H. M. Whitney, Lawrence; C. H. Price, Salem; J. J. Estes, Rockland; F. M. Pease, Lee; Converse Ward, Athol; B. F. Stacey, Boston; C. B. Emerson, Haverhill; S. C. Tozzer, Lynn; W. B. Morse, Indian Orchard; J. W. Colton, Westfield; F. H. Butler, Lowell; F. T. Whiting, Great Barrington; C. E. Ball, Holyoke; F. G. Dinsmore, Worcester; E. B. Saunders, Gloucester.

An invitation from the Springfield members present was read, inviting the next annual meeting to be held in that city. The invitation was accepted with thanks, and on vote it was decided that the next meeting should occupy two days and be held in Springfield the third Wednesday and Thursday of May next.

Mr. H. Canning, of Boston, offered a resolution, "that it is the sense of this association, that an amicable arrangement is desirable, whereby the wholesale trade shall protect the interests of their retail customers in the matter of furnishing drugs and patent medicines to other than legitimate dealers in the same." The resolution was adopted, and doubtless will call for the attention of the Committee on Trade Interests.

Mr. G. F. Dinsmore, of Worcester, offered a resolution that it is the expression of this Association that its members are opposed to the sale of spirituous liquors for any other than medicinal, mechanical, and chemical purposes. This resolution was adopted without a dissenting voice.

Mr. J. G. Forman, of Lynn, presented a resolution on the same subject to be referred to the committee on legislation. It has reference to localities in the State where licenses have been refused and under these circumstances druggists cannot compound some prescriptions without risk of being subject to penalties of the liquor law.

President Sheppard stated that in the call for the meeting it had been announced that some papers mentioned would be read by their authors. He had pleasure in stating that Prof. P. W. Bedford would also speak to them on the subject of alkaloids, and this would be given the precedence.

Prof. Bedford, on being introduced, addressed them on the chemistry of the alkaloids, giving briefly the general points of interest as to their existence in nature and their manufacture.

He was followed by Mr. H. W. Barlett, of Boston, who explained the manufacture and testing of pepsin.

Mr. H. A. Eastbrook, of Fitchburg, read a paper on the subject of percolation (see page 197), and Prof. G. F. H. Markoe, of Boston, a brief explanation of the metric system and its advantages in pharmacy.

The thanks of the association were extended to each of the speakers, to the Worcester members for their hospitality, to the promoters of the organization; the association voted $50 for annual compensation to the Secretary and then adjourned.

The Twelfth Annual Meeting of the New Jersey Pharmaceutical Association was held May 17th and 18th, in Atlantic City. The sessions were held in the City Hall, the use of which was kindly tendered by the Common Council for the purpose. The night before the meeting, those members and friends who had arrived, were invited to an informal reception at the house of Prof. Jos. P. Remington, of Philadelphia, who has a cottage in Atlantic City. Prof. Remington and wife, assisted by Miss Ella Babb (who is a junior in the Philadelphia College of Pharmacy) received the members, their wives, *et al.*, and entertained them with an exceedingly interesting exhibit of several microscopic objects, after which refreshments were served.

The sessions opened Wednesday morning, May 18th, with a fair attendance, including, besides the members, Profs. Maisch and Remington, of Philadelphia, Messrs. Kline and Rink, representatives from the Pennsylvania Pharmaceutical Association, also the following gentlemen representing the Kings County Pharmaceutical Society: Messrs. Penny, Baker, De Forest, and Sayre.

The meeting was presided over by Chas. Holzhauer, of Newark.

Dr. Willard Wright, Mayor of Atlantic City, welcomed the assembled visitors in behalf of the city. Dr. T. K. Reed also, in a short, pithy address, offered a welcome in behalf of the medical profession of the city, to all of which President Holzhauer responded and delivered the annual address, of which we give only a synopsis.

In his address he urged the importance of greater freedom of discussion and interest in the department of papers and queries. He referred to the fact that this State Association was the oldest in the Union; that since its organization a similar organization had been founded in nearly

every State, and as a gratifying evidence of their usefulness, many changes have taken place for the better. He noticed special improvement in the books and periodicals now found in every intelligent pharmacist's store as compared with the past; also the growing desire on the part of young men to acquire an education at our colleges of pharmacy. In the latter he believed much more could be done. He referred to some answers given at some of the examinations before the State Boards of Pharmacy, where one young man said that "ergot was a small bean from a foreign country;" another, that "it was a plan: growing in Pennsylvania; that the root and leaves were the parts used and that "glycerin was a pinkish liquid from the stomach of a pig." Another, that "percolation is the passing of a liquid through a glass, etc."

He trusted the day was not far distant when a diploma would be the only qualification to allow any one to engage in the business; that more care should be exercised in the selection of young men to learn the profession; to see that they have a common school education, upon which to build a diploma for their aim, to all of which must be added a general business education.

He referred to the fact that some had been disappointed at the workings of the pharmacy law, having expected rather to obtain a monopoly of the business than that it should be a protection to the public by allowing only qualified persons to dispense medicines.

He hoped that pharmacists would make the best use of what legislation had done, and to watch every opportunity to improve what they already have.

He referred to the fact that one member of the Association had resisted the action of the law to the extent of a suit in law, which had been decided in favor of the Board of Pharmacy.

He paid a tribute to the memory of Chas. H. Dalrymple, of Morristown, the first president of the Association, and Theodore H. Rust, of New Brunswick, who had died during the year.

The Board of Pharmacy reported that nine meetings had been held during the year for registration and examination.

Total number of applications, 87; passed examinations, 48; registered by diploma, 22; rejected, 17.

Total number of registered pharmacists in the State, 1,023.

Forty-three passed on their first examination and five on second.

No amendment or change had been made in the pharmacy law.

There were not as many complaints as formerly of violations of the law. Judgment had been rendered by the Supreme Court of the State in favor of the boards in Jersey City case referred to in the President's address. Governor Ludlow had assured the boards of his willingness to aid them in carrying out the provisions of the law.

At the request of the Pennsylvania State Pharmaceutic Association, the following resolution was adopted and ordered sent to New Jersey representatives in Congress, the object to be attained being the removal of the stigma and odium attached to the profession by being classed as liquor dealers.

"*Whereas*, Apothecaries or pharmacists, in the regular prosecution of their business, are compelled to sell in combination or in their pure form the various spirituous liquors, for the sale of which by this act a retail liquor dealer's license is required, *It is hereby provided* that any apothecary or pharmacist who, upon oath or affirmation, declares that he does not propose or intend to sell such spirituous liquors as a beverage, but only for medicinal purposes, shall, upon the annual payment of a sum equal to the sum required for the retail liquor dealer's license, be exempt from taking out such license, and shall receive from the Collector of Internal Revenue a receipt setting forth this exemption. Said receipt need not be publicly exposed at his place of business, but must be shown to any internal revenue officer upon demand."

A resolution was also adopted, and telegraphed to the Chairman of the Committee on Ways and Means in Congress, urging the passage of the pending bill, repealing the stamp tax on bank checks, matches, medicines, and proprietary articles.

Steps were taken to create a life membership in the Association; also to provide for compliance with the pharmacy law as a requisite of eligibility to membership.

In answer to queries, Mr. Fred. B. Kilmer, of New Brunswick, read a lengthy review of some of the new drugs during the past ten years, especially of such as have proved of real importance, in which he good-naturedly criticised the modern method of bringing many so-called "new drugs" to notice, but urged the more interest and investigation in the many truly valuable drugs being constantly brought forward. He held that the pharmacist should be the leading spirit and guide to the profession and public in taking up a "new drug" or "remedy," and be able to prevent on one hand imposition and on the other to lead in presenting to notice any possible advancement in the profession. In his paper he reviewed nearly two hundred new drugs, giving their date of introduction, source, and history as to therapeutical values, etc.

J. E. Brown, of Camden, read a paper upon the "Practical Use of the Microscope in Pharmacy," in which he detailed many uses to which the microscope may be applied in a retail pharmacy, showing that the microscope is "no longer a toy or scientific instrument, but an article to be used as a source of both mental and financial profit."

Mr. S. R. Reynolds, of Plainfield, gave "A course of study including the best text-books for assistants and juniors in an ordinary pharmacy."

His paper was very thorough and adapted to practical use in a pharmacy where the business is large or small.

Mr. A. G. Smith, of Belvidere, discussed the topic as to whether the sale of proprietary remedies affected the sale of legitimate drugs.

Geo. W. Parasein, of Perth Amboy, gave an answer to query No. 10: "The best excipient for pills, bearing in mind the necessity for a permanently soft, pliable mass and solubility in the stomach," in which he favored a preparation of glycerin and starch.

Chas Holzhauer, of Newark, gave a verbal answer to the query, "Can anything be substituted for vaseline in the preparation of ointments?" He gave an opinion that vaseline and similar preparations were now so low in price that very little could be saved by attempting to produce a substitute.

Mr. D. Wood Brant, of Newark, gave "a history of pharmacy in New Jersey; its past, present condition and prospects for the future."

Mr. Geo. W. Parasein, of Perth Amboy, gave an "improved formula for the preparation tinct. capsicum, U. S. P."

Mr. Chas. B. Smith, of Newark, read a paper upon the "proprietary rights in physician's prescriptions."

The query of "what steps can be taken to reduce the number of pharmacals on our shelves," was thrown open to general discussion, and the expression of opinions seemed to be that the pharmacist himself should supply the demand for all preparations that he can possibly produce and not sit still and allow the enterprising manufacturer to force this department of his business out of reach.

In the evening of the first day of the meeting, several members of the Camden Microscopical Society, assisted by R. & J. Beck, and Messrs. Queen & Co., of Philadelphia, gave a very extensive and instructive microscopical exhibition, in which they exhibited some very fine specimens of alkaloids and sections of roots, etc. After this exhibition a hop was held at the Ocean House, which was the headquarters of the association.

On the second day of the meeting, the Camden and Atlantic Railway Company tendered an excursion to South Atlantic City, including the famous Elephant Hotel.

The following officers were elected for the ensuing year: *President*, Joseph P. Canby, Atlantic City; *Vice-Presidents*, Joseph Bassett, Salem, and D. Wood Brant, Newark; *Treasurer*, Wm. Rust, New Brunswick; *Recording Secre-*

tary, A. P. Brown, Camden; *Corresponding Secretary*, R. W. Vandervort, Newark; *Standing Committee*, Joseph Bassett, Thomas Combs, H. P. Thom, Chas. Holzhaur, and Robert J. Shaw.

Committee on Papers and Queries: Fred. B. Kilmer, G. A. Mangold, D. Wood Brant.

Delegates to American Association and several State associations were also appointed.

The following queries were adopted for the ensuing year:

1. A paper on the various kinds of wax in the market. Accepted by W. F. Loveland, Elizabeth.

2. What can be done to induce a better class of young men to enter the profession of pharmacy?

3. To what extent are pharmacists justified in manufacturing and indorsing proprietary articles, the composition of which is kept secret?

4. How far should chemical and other tests be applied to drugs as purchased by the retail druggist for dispensing and sale? Accepted by A. P. Brown, Camden.

5. The relative drug strength of the fluid extracts of ergot, digitalis, and cinchona as prepared for commerce by three manufacturing chemists.

6. To what extent may color, taste, smell, and general appearance, be relied upon in the examination and identification of drugs and chemicals? Accepted by R. H. Rickey, Trenton.

7. A paper upon chemistry and its practical application to pharmacy.

8. A volunteer paper by S. L. Rumsey, East Orange.

9. A paper upon toxicology and its practical application to pharmacy. Accepted by D. W. Brant, Newark.

10. Is the sale of soda water and cigars a profitable and proper adjunct to the drug business? Accepted by J. R. Lippincott, Salem.

11. What is the best known vehicle for disguising the taste of quinine? Accepted by J. R. Canby, Atlantic City.

12. A paper upon the practical use of a pharmaceutical still in the laboratory of a retail pharmacist.

13. What is the composition and mode of producing the so-called soluble pepsin in the market?

14. A paper upon syrup Tolu. Accepted by Geo. W. Parasein, Perth Amboy.

15. A paper upon the progress of pharmacy in the year 1882, noting items of interest to the pharmacists of New Jersey. Accepted by Fred. B. Kilmer, New Brunswick.

16. A paper upon botany and its practical application to pharmacy. Accepted by R. H. Vansant, Elizabeth.

The following persons were elected members:

Daniel S. Cook, Trenton; Charles H. Dalrymple, Morristown; F. H. Slater, Matteawan; Daniel J. Patton, Camden; William Wright, Atlantic City; Charles Cortelyou, New Brunswick; George R. Davis, East Orange; Charles E. Williams, Orange; M. W. Crowell, Orange; John L. Yatman, Orange Valley; William L. Disbrow, Newark; Robert Chichester, Newark; John S. Kinsey, Newark; Gerheer Merrien, Newark; P. E. Hummel, Jersey City; Isaac Rowley, Atlantic City; William H. Zelly, Marlton; Martin Goldsmith, Camden; Alexander M. Smith, Newark; George W. Heeny, Camden.

Prof. J. P. Remington was elected an honorary member.

F. B. K.

The Kentucky Pharmaceutical Association met in its fifth annual session in Masonic Hall, at Covington, Wednesday, May 17th, 1882.

The meeting was called to order by the President, Mr. C. S. Porter, at 3 P.M. Both the Recording Secretary, Wm. G. White, and the Corresponding Secretary, W. B. McRoberts, being absent, the President appointed Mr. H. J. Goetze Secretary *pro tem.*, and Mr. A. J. Elwary to assist him.

The Association was welcomed on behalf of the druggists of Covington, Newport and Dayton, in a short address by Mr. G. A. Zwick, which was responded to by President Porter.

The Secretary then read the register for 1882, showing twenty-one members present. The President then delivered his address which, upon motion of Mr. Webb, was referred to the following committee: Vincent Davis, E. C. Reiss, and W. A. McDowell. A message was then read from the President of the Ohio Pharmaceutical Association then in session in Zanesville.

The President was instructed to send fraternal greetings to the Ohio Pharmaceutical Association and to the New Jersey Pharm. Association.

The Executive Committee reported the following names for membership: Jas. A. Curry, Danville, Ky.; Sam. L. Curry, Danville, Ky.; Chas. F. Fechter, Newport, Ky.; W. Scott Riffi, Covington, Ky.; Henry Fritsch, Covington, Ky.; Jos M. Draque, Covington, Ky.; Albert Emminger, Covington, Ky.; J. J. Brooks, Richmond, Ky.; Henry W. Evans, Danville, Ky.; R. K. Dyas, Crittenden, Ky.; C. A. Jeancon, Bellevue, Ky.; Chas. C. Martin, Lewisport, Ky.; G. Holzhauer, Newport, Ky.; Conrad Schildger, Louisville, Ky.; Ed. H. Latham, Dayton, Ky.

The report was received and the President instructed to cast an affirmative ballot.

The Executive Committee was instructed to report resolutions of sympathy and condolence on the death of Mr. Matthias, to be embodied in this printed report.

The President announced the following programme of the Committee on Entertainment of the Covington, Newport, and Dayton druggists.

A complimentary supper at Odd Fellows' Hall at 8.30 P.M., May 17th.

Second Session.

The Association was called to order by President Porter on Thursday, May 18th, at 10 A.M.

Telegrams were received from the Virginia and New Jersey Pharmaceutical Associations, and the answers to them by the President approved.

The reports of the Committee on Legislation, of the delegates to American Pharmaceutical Association, and of the Auditing Committee were then read, and referred to Executive Committee for publication.

Following the reports of Committees and Delegates, the Committee on President's Address then made its report which was read in sections.

"That the Secretary be instructed to send the thanks of the Association for the copy of the Proceedings of the Fifth International Pharmaceutical Congress, held in London in 1881." The Secretary was instructed to write at once.

"We call attention of the Committee on Legislation to the importance of a full and free interchange of opinion upon the part of members on the next bill to be presented for enactment, and it is our opinion that the Committee should be assisted by four faithful workers in different parts of the State, as suggested." Adopted.

The President asked further time to appoint this special committee, as it was very important.

"We think the suggestion of a Committee on Private Formulæ to prepare a list of unofficinal formulæ for publication, a good one, and recommend its appointment." The recommendation was adopted. This makes a change in Standing Committee and must lie over until next annual meeting.

The report of the Special Committee on Papers and Queries was received and adopted.

Dr. Davis read a paper on some New Preparations of Hypophosphites, and also by title a paper on Battley's Sedative by Prof. Diehl.

Dr. Davis read a paper entitled, "Why the Apparent Indifference to the Aims and Objects of this Association, and how can an Interest in it be awakened?"

On motion of Mr. Webb, the paper was received, and ordered printed in Proceedings, after being revised by Dr. Davis, and that enough additional copies be printed to send a copy to each druggist in the State. It was left to the Executive Committee to have it printed in pamphlet form as an extract from the Proceedings, if thought advisable.

President Porter called Dr. Davis to the Chair. The Secretary then read a paper entitled: "What shall we require of Those We receive as Apprentices?" by Mr. E. Warfield.

The Committee on the Exhibition then read their report, and on motion of Mr. Oxley, it was received, and on motion of Mr. Nodler, was referred to Executive Committee for publication.

The Special Committee on Papers and Queries reported in favor of dispensing with the Committee on Papers and Queries, and have a Committee on Volunteer Papers instead. After some spirited remarks by President Porter, Messrs. Reiss, Webb, and Davis, the report of the Special Committee was rejected on motion of Mr. Holzhauer, and the Committee on Papers and Queries was retained.

Mr. Webb then stated that, as the appointment of a Committee on Private Formulæ was not an amendment to the Constitution, but an amendment to the by-laws, it could be acted on at a subsequent session, according to the Chapter V., Article I. of the Constitution and By-laws.

The Association then adjourned until 12:10 P.M., in order to pass the amendment to the By-laws.

Third Session.

The Association was called to order at 12:10 P.M. by President Porter.

On the Committee on Legislation, in addition to the regular committee, the President appointed Messrs. McGill, Warfield, Stout, and Diehl. Delegates to American Pharmaceutical Association, meeting at Niagara Falls, N. Y., in September, Emil Scheffer, C. Lewis Diehl, S. L. Curry, and J. M. Disque.

Mr. Jefferson Oxley then read a paper entitled "Why am I an Apothecary?"

On motion of Mr. Oxley, the amendment to the By-laws, adding to the standing committees a Committee on Private Formulæ, was adopted. The President then instructed the Committee on Nomination of Officers and Standing Committee to include a Committees on Private Formulæ in their report.

Eminence was unanimously selected as the next place of meeting.

The report of the Committee on Nomination of Officers and Standing Committee for the ensuing year reported as follows: *President*, G. A. Zwick, Covington; *1st Vice-President*, G. Holzhauer, Newport; *2d Vice-President*, S. L. Curry, Danville; *3d Vice-President*, H. McGill, Owensboro; *Recording Secretary*, Arthur J. Elwary, Louisville; *Corresponding Secretary*, W. A. McDowell, Lagrange; *Treasurer*, Peter Nodler, Covington.

Executive Committee.—Cary I. Warren, O. A. Beekman, J. A. Flexner, Louisville.

Committee on Papers and Queries.—C. L. Diehl, Louisville; Geo. Gies, Louisville; S. H. Ford, Owensboro.

Business Committee.—H. J. Goetze, Dayton; E. C. Reiss, Covington; Henry Fabra, Falmouth.

Committee on Legislation.—C. S. Porter, Eminence; Jefferson Oxley, Nicholasville; Henry Bathiany, Neport.

Committee on Private Formulæ.—C. L. Diehl, Vincent Davis, and E. Scheffer, Louisville.

The President was instructed to cast an affirmative ballot electing the nominees of the Committee.

Mr. Zwick, upon taking the Chair, thanked the Association in a few words for the honor conferred.

A rising vote of thanks was tendered Mr. Porter, the retiring President.

A vote of thanks was also given to all retiring officers and members of the Standing Committee, and to the druggists of Covington, Newport, and Dayton for their hearty welcome, and to the exhibitors for their beautiful display.

The selection of a seal was left with the Treasurer, Mr. Nodler.

The minutes of the second and third session were then read and adopted. The Association then adjourned.

New York State Pharmaceutical Association.

THE fourth annual meeting of the Association convened at Agricultural Hall, Albany, on Tuesday morning, June 20th, the President, Dr. A. B. Huested, in the Chair. Prof. Jacob S. Mosher being introduced, delivered an address of welcome on behalf of the medical profession and the citizens of Albany. Dr. H. J. Menninger, of Brooklyn, on behalf of the Association, accepted the hospitalities offered and tendered the thanks of the visiting pharmacists. The printed minutes of the last annual meeting were then presented by the Secretary, Mr. Clay W. Holmes, and their reading was, on motion, dispensed with. President Huested delivered his annual address, giving a very interesting historical sketch of the development and progress of the art and science of pharmacy. The address also suggested some amendment of the By-laws in relation to the collection of dues and fees and the compensation to the Secretary. The address and recommendations were referred to a special committee, consisting of Messrs. Wm. H. Rogers, E. A. Sayre, and Julius Rieffenstahl. One hundred and five proposals for membership were then read, and referred to the Executive Committee. Notice to amend the By-laws so as to change the order of business was given.

The Secretary presented his annual report, which was read and accepted. From it we learn that 138 new members were elected at the Buffalo meeting; that 2 have died during the year, leaving a total membership at the opening of the present meeting of 481. The printed copies of last year's "Proceedings" had been distributed to members and other societies, leaving about 400 copies on hand.

The President announced that the druggists of Albany invited the members of the Association and their friends to an excursion and entertainment on Wednesday afternoon and evening, which invitation was accepted with thanks.

The President appointed Messrs. Chas. J. Powers, Aaron Sager, and Alfred James Inloes a committee to examine the exhibition of drugs, chemicals, appliances, etc., which were displayed in another part of the building.

Messrs. F. T. Whiting, of Great Barrington, and F. M. Pease, of Lee, were announced as delegates from the Massachusetts Pharmaceutical Association, and they were invited to the privileges of the floor.

The Treasurer read his annual report, from which it appears that the expenditures from May, 1881, to June 14th, 1882, were $938.19; that the receipts were $1,306, and the balance on hand $816.14.

The report of the Executive Committee stated that the Committee had revised and prepared for publication the proceedings and minutes of last year's meeting. There were printed 1,000 copies of the Proceedings at a cost of $223.76. The present membership of the Association was reported as numbering 483.

The Association was again called to order at 4 o'clock P.M. The Committee on Pharmacy Law reported the result of its labors, performed in conjunction with similar committees from the New York College of Pharmacy and the Kings County Pharmaceutical Association. The bill introduced in the Legislature through the agency of the Committee had finally failed to pass, after being variously amended in the Assembly. The Committee also reported the progress of laws regulating the practice of pharmacy in other States.

The Executive Committee reported favorably on the proposition for membership of 104 candidates, and the following new members were elected:

R. J. Wait, Greenwich; John W. Richtmeyer, Cooperstown; Louis B. Fortner, Ithaca; Fred'k T. Beach, Sing Sing; W. E. Van Buskirk, Saugerties; John S. Phillips, Gloversville; Geo. F. Cole, Waterford; Wm. H. Leonard, Tarrytown; J. A. Van Anken, Gloversville; C. H. Willard, Elmira; Jas. A. Barkhuff, Amsterdam; F. W. Hutchinson, and J. F. Van Nort, Jr., Elmira; Andrew M. Moffitt, and Wm. B. Smith, Troy; H. S. Dickson, Lansingburgh; Wm. A. Arcibald, Hoosick Falls; John H. Barr, Newburgh; Chas. H. Bostworth, Troy; Silas W. Tobey, Jr.,

Hudson; John B. Spotten, Jas. H. Adams, Lansingburgh; John L. Ryan, Salem; E. Sanford Gregory, Fort Plain; Archie Cullen, West Troy; Jas. H. Pickett, Fort Plain; Harry A. Phillips, Gloversville; W. Eugene Wayne, Clyde; Wm. A. Stacy, Addison; Wm. Winter, J. Calhoun, M.D., Delhi; Amos L. Sweet, M.D., Genoa; Edgar S. Pupper, Binghamton; O. E. Anderson, Lockport; Chas. H. Sherwood, Syracuse; Cyrus A. Watson, Homer; W. D. Snedeker, Syracuse; Darwin M. Mead, Oswego; Joseph N. Hunt, Auburn; M. M. Kenyon, Newark; Jas. A. Harrison, Greene; Ezra L. Ostrom. Binghamton; Geo. E. Tappendem, Chas. C. Garrett, Ithaca; Geo. O Whitcomb, Gilbertsville; Jas. E. Batesford, Waterloo; J. W. Rushmore, Palmyra; B. T. Standish, W. D. Balliet, Lockport; Frank L. Bates, Albion; Nelson R. Wheeler, Auburn; John M. Eagan, Syracuse; John R. Earl, Jr., Palmyra; Henry D. Barts, Auburn; Chas. E. Langdon, Rochester; Andrew Baltes, Oswego; Chas. A. Snedeker, Lyons; S. T. Kingston, Oswego; W. H. Bisdee. Waterloo; Chas. C. Johnson, Syracuse; Joseph H. Paulus, Herman Alsberg, Chas. E. Lloyd, Martin W. Macomber, Wm. T. Stafford, Jeremiah J. Mattemere, Leonard H. Wheeler, Albany; Fred. W. Alexander, Rochester; Wm. J. Walker, Albany; Wm. A. A. Sloat, Newburgh; Samuel J. Bendiner, Samuel A. Brown, Jas Taylor, New York; Alexis Crane, Fred'k E. Hatch, Jamestown; John Chester Bowe, Syracuse; S. J. Sparks, Binghamton; Geo. E. Flood, M.D., Geneva, N. Y.; H. B. Parsons, New York; John Zimmerman, L. Cotton Earlville, Stephen C. Hodkins, Joseph E. Moore, Albany; Louis P. Nathanson, S. A. Douglass Willeon, C. Lincoln Williston, New York; Benj. F. Greene, Mattewan; Wm. A. Ross, Madeline; Henry B. Brevier, Mattewan; Wm. Palmatier, Albany; W. A. Washburn, Madeline; Darius Smith, Willard J. Stevens, Syracuse; Louis A. Baker, Schuylerville; Chas. F. Wright, New Berlin; Thos. J. Levi, Albany; E. M. Norton, Andes; Herbert L. Collins, Norwen; Byron E. Osborn, M.D., Auburn; F. G. Corbin, Binghamton; Lewis G. Linsenbarth, Hoosik Falls; John E. Wesley, Lyons; Geo. W. Regan, Binghamton; Thos. J. Hughes, Flatbush, L. I.

The committee on the president's address reported favorably on its recommendations, and after some debate the by-laws were amended, fixing the salary of the secretary at $100, and regulating the manner of collecting dues. The proposition to amend the order of business so that the officers for the ensuing year may be elected before preceding to miscellaneous business was then carried. An election of officers, etc., resulted as follows:

President, A. B. HUESTED, M.D., Albany; *Vice-Presidents*, Wm. H. ROGERS, Middletown; CLARK Z. OTIS, Binghamton; T. J. MACMAHAN, New York; *Secretary*, CLAY W. HOLMES, Elmira; *Treasurer*, CHAS. H. BUTLER, Oswego; *Executive Committee*, FRANK L. NORTON, Delhi; W. L. DUBOIS, Catskill; WM. P. De FORREST, Brooklyn. *Delegates to the American Pharmaceutical Society*, C. J. POWERS, Syracuse; C. H. GAUS, Albany; E. A. SAYRE, Brooklyn; F. F. KNAPP, New York, and A. J. INLOES, Binghamton.

Mr. W. L. DuBois presented the report of the Committee on Pharmacy and Queries, recommending the following:

1. *Boro*-glycerite. What is its value as an anti-ferment and anti-putrid agent in pharmaceutical and commercial uses?

2. *Fluid Extract and Syrup of Senega.* Which is the best method of those which have been suggested for the manufacture of the fluid extract and syrup, to avoid gelatinization?

3. *Sulphate of Cinchonidia*, an examination of the various makes, as to freedom from other salts.

4. *Amount of Fixed Oil in Emulsions;* a simple method by which this may be determined.

5. *Pills of Iron by Hydrogen*, when made with a vegetable extract, they almost always swell and crack. What is the cause of this and how may it be prevented?

6. *Pulsatilla* is being used to quite an extent by our physicians, they mostly prescribing the tincture. There is no officinal preparation. King's dispensatory gives one 8 oz. of the herb to a pint, and other preparations 4 oz. to the pint. Pulsatilla: its description, properties, and uses. Give formulæ for tinctures now in use, with suggestions for improvement.

7. *Dialysis* has as yet been limited in general pharmaceutical use to a single preparation of iron; to what other processes can it be adapted? The paper to narrate experiments and processes.

8. *Tincture of Kino.* Various formulæ have been given for its preparation, said to avoid gelatinization. It is desired that all such formulæ be experimented with, and that the results of not less than eight months' experience with the finished samples be reported on. Each specimen should have the usual exposure and handling that might occur in business.

9. *Insect Powder*, a report on the quality of the same as found in commerce.

The Secretary was, on motion, instructed to have the list of queries printed, and forward copy to each member.

Amendments to the Constitution proposed last year were then considered, and only the one fixing the salary of Secretary at $100 adopted.

Dr. Eaton moved that Chas. H. Butler, the Treasurer of the Association, be elected a life member without payment of fee. Carried.

The President was authorized to appoint delegates to other State pharmaceutical associations.

Prof. P. W. Bedfod read a report of the delegates to the meeting of the American Pharmaceutical Association, at Kansas City.

The report of Prof. Oscar Oldberg, the Association delegate to the International Pharmaceutical Congress, was also read by Prof. Bedford. Mr. Oldberg forwarded a copy of a paper read by him, and gave an account of the meeting, with which our readers are already familiar.

The association was again assembled on Wednesday morning, when L. E. Ullman, W. T. Mayer, C. H. Smith, Andrew Sawyer, Chas. Richards, James M. Hawley, Geo. T. Doty, and Caspar Paulus were elected members. and Prof. Oscar Oldberg, of St. Louis, John M. Maisch, of Philadelphia, and E. R. Squibb, of Brooklyn, were elected honorary members.

The report on Trade Interests, read by Mr. Sweet, was referred to the Executive Committee.

A resolution was adopted providing for the appointment of a standing Committee on Legislation.

The Executive Committee reported in favor of Ithaca as the place for holding the new annual meeting; that the expense of entertainment be divided *pro rata* among the members participating, and that a committee be appointed to make the necessary arrangements for the meeting.

The report was adopted and Mr. J. B. Todd, of Ithaca, elected as local secretary. Papers were read on the following topics, and referred to the appropriate committee:

"Self-Education of Young Pharmacists."—Prof. Bedford.

"The Preparation of Fluid Extract of Wild Cherry."—C. W. Holmes.

"Pharmacy and Pharmacists."—C. H, Scoville.

"Pill-Coatings."—C. W. Holmes.

In the afternoon, the association started on a steamboat excursion down the Hudson River as far as Coxsackie and returning at 9 P.M., left some of the passengers at Albany, while the rest prolonged the excursion up the river to Troy and finally reached Albany at 11 P.M.

Pennsylvania Pharmaceutical Association.

THE fifth annual meeting of the Association was held at Altoona, on the 13th and 14th of June, Dr. Geo. A. Kelly, of Pittsburgh, presiding. Mayor Howard welcomed the Association to Altoona. About one hundred and forty members were present at the opening of the session, and the following new members were admitted:

S. F. Helleman, Philadelphia; S. S. Henderson, Brookville; J. F. Oscar Agthe, Harrisburg; F. Le Clemson, Philadelphia; David M. Ulrich, Chester; G. Banks Wilson, Chester; W. G. Gross, Philadelphia; William Farquhar, Reynoldsville; Alton Clabaugh, Altoona; W. H.

Irwin, Altoona; H. B. Hooler, Altoona; P. W. Snyder, Hollidaysburg; Jno. M. Siegfried, Bradford; John C. Mills, Duke Centre; Stelle G. Hartman, Brookville; Will Melich, Berwick; W. Frederick Manlich, Columbia; J. S. Nixon, Chambersburg; John E. Sipe, Carlisle; Alfred G. Stanley, Lykens; Thomas A. Clarkson, Shamokin; Sam'l S. Wolf, Shippensburg; Harvey J. Nice, Clearfield; A. W. Bayard, Bellefonte: Aaron M. Stearn, Harrisburg; James Yaney, Jr., Sandy Lake; M. H. Bickley, Chester; Thomas Barrowman, Scranton; Avery H. Schobert, Wilkesbarre; Geo. W. Jenkins, Scranton; Jno. S. Jadwin, Carbondale; Fred. M. Bouton, Plains; Jas. T. Rodman, Hawley; John Sutton, Tower City; Alfred D. Calhoon, Beaver Falls; C. S. Brehman, McVeytown; Justin L. Hill, Williamsport; John C. Owsley, Sharon; L. A. Ridgeway, Mansfield; Cort. G. Campbill, Johnstown; T. J. M. Bowers, Chester; Howard Kingsbury, Philadelphia; D. G. Owens, Altoona; Chas. K. Laverty, Harrisburg; Jno. B. Foltz, Harrisburg; James Prichard, Philadelphia; W. W. Ritz, Altoona; E. K. Thompson, Titusville; John M. McNeil, Scotdale; F. E. Hill, Greensburgh; Jacob Spohn, H. B. Schweitzer, John Beck, Chas. Schwann, Pittsburgh; H. P. R. Blandy, Oceola Mills; W. H. Holmes, Tyrone; J. H. Black, Huntingdon; R. T. Mull, Phillipsburg; J. Ross Martin, Altoona; L. C. Castrer, Pittsburgh; Albert Kaercher, Alleghany City; A. P. Happer, Louis Brehm, Pittsburg; Joseph M. Kuney, W. W. Davis, Alleghany City; B. E. Lynch, Herman J. Whitehorn, Pittsburgh; Geo. M. Thomas, Derry Station; Sam'l H. French, Philadelphia; Hugh H. Martin, Franklin; P. W. Lashier, Pittsburgh; C. N. Boyd, Somerset; Fred. W. Mayhew, Dunmore; H. G. Blackley, Waynesburgh; E. B. Henderson, Brookville; John C. Innes, Altoona; John Farquhar, Reynoldsville; R. D. Williams, Plymouth; Thos. D. Lewis, Providence; J. B. Grimshaw, Driftwood; Will R. Ross, Frank A. Mathus, Lebanon; Andrew J. Snively, Hanover; Geo. W. Wagoner, Johnstown; L. D. Davis, Franklin; C. M. Ewing, Tyrone; A. I. Shaw, Clearfield; C. S. Taylor, Altoona.

The entire membership is now 304 active and three honorary members.

In the address of the President, delivered at the evening session, a full explanation of the rebate system was given. The Committee on Legislation and Trade Interests, through its chairman, William L. Turner, proposed the adoption of a resolution authorizing the committee to draw upon the treasurer of the Association for any amount not exceeding $200, to meet the actual expenses incurred in securing such legislation as the committee might deem proper in the interests of pharmacy or of the Association.

The committee reported that it had secured the abolition of the tax on patent medicines, and recommended that the legislature of the State be requested to enact a law to regulate the practice of pharmacy and the sale of poisons, and to prevent the adulteration of medicines.

The committee, consisting of C. H. Nerdles (*chairman*), C. A. Heinitsh, C. T. George, P. M. Ziegler, J. A. Meyers, and H. N. Coxe, appointed last year for the purpose of securing national legislation to modify the laws relating to the sale of liquors by pharmacists, and to abolish the stamp duty on patent medicines, reported progress, and was continued, and the Association adopted the following resolution bearing upon this question:

Resolved, That the Pennsylvania State Pharmaceutical Association, at its meeting, held at Altoona, June 13th, 1882, desires to express its approval of the measure now before Congress, abolishing the stamp-tax on matches, bank checks, medicines, and perfumery, and the reduction of the revenue tax on liquors and tobacco, and urge its prompt passage; and that this action be telegraphed to Hon. W. D. Kelly, chairman of the Committee of Ways and Means, at Washington, D. C.

The secretary was instructed to correspond with the Committee on Ways and Means in relation to the foregoing resolution.

The Association adopted the following:

Whereas, The copyrighting of common pharmaceutical names, by registering them as trade-marks, is one of the latest developments of quackery; it is hereby

Resolved, That this Association, in the true interests of pharmacy, protests against the injustice of allowing any such copyright; and it is also

Resolved, That a circular, signed by the President and Secretary of this Association, be sent to each county medical society in this State, asking their aid to check the evil, by requesting their members to avoid prescribing such copyrighted articles.

Resolved, That the delegates of this Association be instructed to bring this subject to the attention of the American Pharmaceutical Association and the various State pharmaceutical associations to which they may be credited.

A motion was adopted to request of Congress the re enactment of a ten per cent duty on quinine.

Among the miscellaneous reports was one by Mr. W. B. Thompson, of Philadelphia on the relations of pharmacists and apprentices, in which the report asserted that the pay of apprentices was too small, their work too hard, and that pharmacists do not take as much interest as they ought in the welfare of their apprentices.

Reports were received from delegates to the American Pharmaceutical Association (Geo. W. Kennedy, chairman), New Jersey State Pharmaceutical Association (W. B. Thompson), and the Ohio State Pharmaceutical Association (C. H. Beach).

Harrisburgh is to be place of meeting next year, the date being the third Tuesday in June.

The following officers, committees, and delegates were chosen for the ensuing year: *President*, Alonzo Robbins, of Philadelphia. *Vice-Presidents*, J. B. Duble, of Williamsport; Charles Cressler, of Chambersburg. *Treasurer*, Joseph L. Lemburger, of Lebanon. *Secretary*, Dr. J. A. Miller, of Harrisburgh.

Committee on Legislature and Trade Interests.—Wm. L. Turner, Philadelphia; Chas. T. George, Harrisburg; W. S. Zeller, Bellefonte; W. D. E. Hayes, Shippenburg; Chas. A. Heinitsh, Lancaster; M. N. Kline, Philadelphia; Q. H. Redsecker, Allentown; Chas. T. Klump, York; John F. Patton, Lebanon.

Committee on Adulterations and Deterioration.—Dr. L. Wolff, Philadelphia; Geo. W. Kennedy, Pottsville; A. C. Robertson, Pittsburgh.

Committee on Papers and Queries.—Chas. T. George, Harrisburg; Wm. McIntyre, Philadelphia; Louis Emanuel, Pittsburgh.

Committee on Apprentices and Drug Business.—W. B. Thompson, Philadelphia; Wm. F. Horn, Carlisle; S. Henry Stevens, Pittsburgh; Chas. A. Heinitsh, Lancaster; Wm McIntyre, Philadelphia.

Committee on County Pharmaceutical Associations.—C. A. Heinitsh, Lancaster; Geo. W. Kennedy, Pottsville; Ed. T. Myers, Bethlehem; Ed. A. Cornell, Williamsport; Geo. W. Kessler, Altoona.

Committee to Visit Washington on United States Liquor License and Stamp Act.—L. Wolf, Philadelphia; Chas. A. Heinitsh, Lancaster; Chas. T. George, Harrisburg; Jas. A. Myers, Columbia; W. S. Beach, Pittsburgh; P. M. Ziegler, Reading.

Delegates to the American Pharmaceutical Association.—Geo. A. Kelly, Pittsburgh; Geo. W. Kennedy, Pottsville; Chas. A. Heinitsh, Lancaster; E. A. Cornell, Williamsport; John F. Patton, York.

The following queries were accepted:

Give a review of new drugs or remedies introduced during the last ten years, with especial reference to those which have proved valuable. Accepted by L. Wolf, of Philadelphia.

What is the best menstruum for extracting colombo root for tincture and fluid? Accepted by George W. Kennedy, Pottsville.

Give a good formula for the manufacture of a fluid extract of wild cherry bark that will represent its tonic and astringent properties as well as its hydrocyanic acid, and that keep well an indefinite length of time without deterioration or precipitation. Accepted by J. W. Landis, of Reading.

The exhibit was of unusual interest and contained the wares of the following noted houses:

NEW YORK.

W. H. Schieffelin & Co., represented by Messrs. W. G. Day & Chas. Parsons, exhibited their well-known pills and granules, fluid extracts, elixirs, essential oils, etc. They also showed a number of rare and foreign drugs, in some instances arranged so as to show the difference between the same drug derived from various sources.

Theodore Ricksecker exhibited a large line of toilet articles, marine lint, etc., some of the perfumes being of new brand, such as "Martha Washington," "Spanish Jasmine," "Florida Breeze," etc. D. Pringle, Jr., had charge of this exhibit.

Seabury & Johnson, with the aid of Messrs. Owen and Boyce, showed a large variety and attractive (as well as adhesive) forms of plasters and surgical dressings.

Young, Ladd & Coffin were represented by their "Lundborg's" perfumes in most attractive shapes.

Lazell, Marsh & Gardiner exhibited their well-known brands of perfumes and extracts, both powdered and fluid; Chas. H. Kobart being in charge.

PHILADELPHIA.

Powers & Weightman showed fine chemicals, embracing alkaloids and salts from cinchona, opium, potassic bromide and iodide, mercurial preparations, and citric and tartaric acids, under the supervision of Mr. T. P. Cook.

Smith, Kline & Co. showed a full line of their noted concentrated solutions for the preparation of elixirs and syrups; fluid extracts and a large variety of rare drugs. Mr. Thompson attended to the exhibit.

John Wyeth & Bros.' compressed pills, fluid extracts, wines and syrups were fully represented in the samples shown.

Robert Shoemaker & Co., in addition to their specialties —cod-liver oil from Norway and Johnston's Fluid Beef— showed a handsome line of drugs powdered by themselves and of guaranteed purity.

W. R. Warner & Co. (of Philadelphia and New York), exhibited all varieties of their celebrated sugar-coated pills and parvules, elixirs, and fluid extracts. Their troches and shelf-bottles were also noteworthy.

J. M. Maris & Co. had an endless variety of sundries and glassware; Mr. Maris himself being present.

J. W. Champion & Co. showed very superior bay-rum made at St. Thomas in the West Indies, for which they are the sole agents in this country.

W. H. Pile & Sons showed a great variety of instruments of precision used by druggist and chemists, as well as some special lines of drugs and chemicals, such as prepared chalk, sulphocyanide of mercury, and phosphorated rosin used for pill-making.

Moritz Eisner exhibited a beautiful variety of products from the laboratory of H. Tromsdorf, of Erfurt, Germany, which attracted much attention. It embraced the new mydriatics—sulphates of eserine and duboisin, and iodoform, nitrate of urea, etc.

Turner & Wayne were the exhibitors of an extensive display of "sundries," embracing over three hundred varieties of hair brushes, the "Perfect" tooth brush, perfumes, etc.

H. C. Blair's Sons exhibited cosmetic preparations, wax tapers, wheat food, elixirs, etc.

CHICAGO.

G. Heineman & Co., of Chicago, had all kinds of plasters on exhibition, as well as elastic and suspensory bandages, braces, etc.

The Size of a Molecule of Water.

DE HEEN has calculated, on the basis of capillary phenomena, the diameter (δ) of a molecule of water. He finds it to be

$$\delta = 75.10^{-9} mm = 0.000,000,075 \text{ millimeter.}$$

The number of molecules of water contained in a cubic millimeter (=1.6 minim) will, therefore, be 25 trillions.—*Annal. de la Soc. Scient. de Bruxelles.*

NOTES, QUERIES AND ANSWERS.

Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us, as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects, in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.

Tannin and Iron Color in Liquors.

(To Query 1047, June number, p. 189.)

FOR this purpose I have found two methods available, either of which seems to me preferable to the one in your June number (producing a precipitate of ferrocyanide in the liquor): One way is to add *tartaric acid*, a little at a time, until bleached, waiting for the full effect after each addition some time, say ten minutes, and afterwards *nearly* neutralizing with sod. carbonate. The acid should remain in excess. In adopting this plan, I find out the quantity of acid required for a quart, and then put the whole quantity of acid in proportion to the whole of the liquor to be thus treated.

The other way is to mix with the liquor a good lot of *calcined magnesia;* let it rest over night; shake and filter. This will leave the brandy much paler than originally. Color with burnt sugar. I am not prepared to say that the magnesia plays a chemical part, but I think so because kaolin and prepared chalk were not as successful.

Respectfully, H. E. HOELK.

ST. LOUIS, May 30th, 1882.

DEAR SIR:—In addition to your suggestions under the head of "Tannin and Iron Color in Liquors" in the last number of your valuable paper, allow me to add the following simple method for removing the above-mentioned color:

To forty gallons liquor, add about one pint of milk, and agitate thoroughly two or three times. The milk is immediately coagulated, the casein, uniting with the tannate of iron, is then allowed to subside, the clear liquor drawn off, and the remaining liquor separated from the precipitate by means of a cloth or paper filter.

The original color may then be restored by caramel solution or other harmless color.

Yours respectfully, J. GEO. MUELLER.

CINCINNATI, OHIO, June 5th. 1882.

Another correspondent suggests the use of *citric acid*, and the subsequent removal of an excess of this by means of lime. The lime salt will only be partially insoluble in the cold liquid.

The use of organic acids to prevent or to obtund the tannin and iron reaction was, of course, well known to us, but our object was to use an agent which could be almost completely removed again from the liquid.

The experience of our correspondents, to whom we are indebted for their valuable communication, seems to be in favor of the process detailed by them.

Ptomaines.

A CORRESPONDENT writes:

"Noticing your paragraph in the June number (p. 189) on the derivation of the word "ptomaines," from $\pi\tau\tilde{\omega}\mu\alpha$,

I wonder if you noticed in the October number (1880) of the *Annales d'Hygiène* (p. 351) the following sentence:

"'Si l'on a appliqué depuis les travaux de M. Selmi le nom de ptomaines aux alcalis cadavériques, pour indiquer qu'ils sont volatils, alterables, fugitifs'—(if the name 'ptomaines' has been applied, since the labors of Selmi, to cadaveric alkaloids, in order to indicate that they are volatile, alterable, fugitive).

"It would appear from the article of Boutmy and Brouardel that distinctions between πίπτω (to fall) and πέτομαι (to fly) were ignored either by them or by Selmi. It is plain, I think, that Selmi gave the name as from πτῶμα, as you very correctly say, whereas they would appear to go back to the root πτ ('to fly') in calling them 'volatile.' For, although we often speak of 'volatile Frenchmen,' it would be rather too much for a student of chemistry to imagine a 'volatile cadaver,' even though of French nationality."—

Concerning Selmi's discovery, we would state that he published the first notice on cadaveric alkaloids in 1872, but he did not apply to them a specific name until he published his monograph on the subject, comprising all observed facts, under the title: *Sulle ptomaïne od alcaloidi cadaverici e lore importanza in tossicologia*. Bologna, 1878. Here he applies to the alkaloids for the first time the name "ptomaines," and this he derives himself from πτῶμα ("cadaver") —Ed. N. R.

On Civet.

BY PROF. XAV. LANDERER, OF ATHENS, GREECE.

The civet cat (*Viverra Civetta* Schreb.) is a bloodthirsty animal inhabiting the hottest parts of Africa and Abyssinia. From Abyssinian priests who were sent to Athens with presents from the Emperor of Abyssinia to the King of Greece, I learned that one such animal, when caught wild, is readily sold at 1,000 piasters. They are kept in iron cages, and are fed with meat. Once a week the animals are bound to the inner side of the cage by means of ropes, and, while thus helpless and harmless, the civet is removed from the sac by means of a small spoon, and transferred into goat or ox horns. In this condition it is sent to market in considerable quantity all over the Orient, representing a large value. It was (and is still here and there) esteemed as a remedy against hysteria and other nervous diseases. As a perfume it is one of the greatest favorites of the Arabian or Abyssinian women, who apply it to all parts of the body, to their linen, and their veils, so that the odor they effuse may be perceived at a distance. Even the men apply it to their turbans. In oriental trade, civet is sometimes falsely called "musk." Abyssinian merchants usually sell it in tin boxes on the Mysri (Egyptian) market in Constantinople.

No. 1058.—**Extraction of Chlorophyll from Vegetables** (H. D. W.).

The article published in our volume for 1879, page 114, from the *British Medical Journal*, states that Guillemare extracts chlorophyll by acting on spinach with a weak solution of soda, and that this solution may be used to impart a green color to vegetables. The original does not state the strength of the soda, but we may judge it to be *about* of the strength of two to two and a half per cent, such as it may be prepared by dissolving, say forty parts by weight of commercial caustic soda in sufficient water to make one thousand parts by weight. Spinach was probably selected because it contains a larger quantity of chlorophyll than most other *culinary* plants. Of course, chlorophyll may be extracted from the green parts of *all* plants. The best solvent for chlorophyll is boiling alcohol. Only, if waxy or fatty substances are present, some of these will contaminate the product. A previous treatment with ether will remove these.

The best way is to exhaust the vegetable first with water, and to follow this with boiling alcohol. Benzin also extracts some chlorophyll from the fresh plant, before treatment with water or hot alcohol; and it even extracts some after the boiling alcohol has taken out all it could. The chlorophyll dissolved by the boiling alcohol may be obtained in a purer condition by acidulating the cold alcoholic solution with hydrochloric acid, diluting it with some water, and then shaking it out with benzin, which dissolves the chlorophyll (with any accompanying fatty matters, which would not be objectionable for your purposes), and leaves behind the xanthophyll (the yellow coloring matter of vegetables).

If proper apparatus is available to recover the alcohol and benzin, this process *may* be used in practice, perhaps. The other method mentioned by you, namely contusing the herb in a wooden mortar, collecting the juice and filtering, whereby the "chlorophyll" remains on the filter, *may* yield a product suitable for coloring vegetables; but it certainly is not chlorophyll alone, but the whole of the insoluble parts of the plant colored by its chlorophyll.

We have been informed that some manufacturers use small quantities of indigo-carmine and tincture of turmeric or infusion of safflowers used in suitable proportions to produce the desired tint. While these ingredients, in themselves, and in the small quantity used, are doubtlessly harmless, the practice cannot be recommended on ethical grounds.

No. 1059.—**Elixir of Phosphate of Iron, Quinine, and Strychnine** (F. H. C.).

This correspondent wants a formula in which *phosphate* of iron, not the pyrophosphate is used.

A soluble phosphate of iron may be prepared by the intervention of the citrate of an alkali, just as the pyrophosphate is made. The phosphate should be the *ferric* salt. And the soluble salt is best prepared by Mr. Dohme's formula (*Proc. Amer. Pharm. Assoc.*, vol. 29, 1881, page 435):

	Parts.
Citrate of iron,* in scales	6
Phosphate of sodium, in clear crystals	7
Distilled water	q. s.

Dissolve the citrate of iron in twelve parts of distilled water by heating on a water-bath. To this solution add the phosphate of sodium and stir constantly until it is dissolved. Lastly, evaporate the solution at a temperature not exceeding 60° C. (140° F.) to the consistence of thick syrup, and spread on plates of glass, so that the salt, when dry, may be obtained in scales.

It will hardly be necessary to annex a full formula for the elixir, seeing that we have published a very large number of formulæ for elixirs not long ago (January number, page 20–21).

No. 1060.—**Safety Lantern** (B. W.).

To work, at night, in a place containing highly inflammable and volatile liquids, and to use a light in such places, is an unsafe undertaking. Where there is a necessity for this, precautions may be adopted which will greatly lessen or entirely remove the risk. One of these consists in having the source of light so encased and protected that no communication can exist between the atmosphere of the room and the light. This may be either placed in an opening in the wall lined with glass on the inside, and made absolutely air-tight towards the room, or it may be placed inside of a sheet-iron shaft running from the floor to the ceiling, and provided, at the proper height, with hermetically closed windows, behind which the lamp is suspended.

We have also lately seen an advertisement by G. August Schoene & Son, of Dresden (Trompeterstrasse 17), in which they announce that they manufacture a "safety-lantern" so constructed as to entirely prevent the ignition of inflammable liquids or gases. The lantern was exhibited before the Druggists' Association of Dresden on March 2d, and subjected to severe tests. Alcohol, disulphide of carbon, and benzin were poured or sprinkled into the burning lantern, also street-gas and vapors of alcohol. All of these took fire *inside* of the lantern only, the flame never communicating outside. The price of the lamp is stated to be 18 marks.

* Not to be confounded with citrate of iron and ammonium, as it very frequently is.

No. 1061.—**Furniture Polish** (Ohio).

The following mixture is much used:

Olive oil	9 parts.
Oil of amber, rectified	9 "
Oil of turpentine	9 "
Tincture of alkanet	1 part.

Mix and keep in a well-stopped bottle. When using it, pour a little upon a pellet of cotton, apply it lightly to the wood several times, and then rub it dry with a cotton rag. If the polish of the furniture has only faded, it will be entirely restored. Of course, if the surface has been rendered rough, or has been scratched, it must first be restored to its former smoothness.

No. 1062.—**Oleate of Lead** (J. J. W.).

This is most readily prepared from the commercial *Emplastrum plumbi*, lead plaster or diachylon plaster, which is a mixture composed chiefly of oleate and palmitate of lead. The oleate of lead is soluble in petroleum benzin, while the palmitate is not. If you, therefore, digest a suitable quantity of lead-plaster with a sufficient quantity of benzin, you will dissolve the oleate and leave behind the palmitate of lead. By filtering you will remove the latter, and, on evaporating the benzin solution, you will have left the oleate of lead. The benzin used should have a specific gravity of 0.670 to 0.675 and should boil between 50° and 60° C. (122° to 140° F.).

If you wish to digest the plaster without loss of benzin, use an upright condenser, so as to make the condensed vapors run back in the flask. And instead of evaporating off the benzin, it may be distilled off by means of the same condenser, so arranged that the condensed liquid may collect in a receiver.

ITEMS.

American Pharmaceutical Association. — The members of this association are hereby notified that the thirtieth annual meeting of this association will be convened on Tuesday, September 12th, 1882, at 3 o'clock, at Niagara Falls, New York.

The time, the place, and the unusual attractions which will be afforded the visiting members, will, beyond any doubt, make this one of the largest gatherings the associations has ever had.

The local secretary, Mr. Hiram E. Griffith, and the special committee on entertainment have perfected arrangements which will tend to the comfort and pleasure of visiting members, and which cannot fail to be an additional inducement to increase the attendance beyond previous years. These arrangements will be duly announced in a special circular to members early in August.

The objects of the association commend itself to the favorable consideration of every respectable pharmacist of our land, and it should have their hearty co-operation.

Its membership, now over 1,300, enrols a large number of our best pharmacists, and it seeks the addition of good pharmacists to its membership, that they may enjoy its privileges and benefits.

Blank forms of application for membership will be forwarded to all persons who desire them, and who will write to either the president, the secretary, Prof. J. M. Maisch, Philadelphia, or G. W. Kennedy, Pottsville, Pa.

P. W. BEDFORD, *President.*

NEW YORK, June 20th, 1882.

College of Pharmacy of the City of New York.—A quarterly meeting of the college was held on Thursday, June 15th, at 8 P.M., at which the usual routine business transacted.

On the same evening a special meeting was held to elect a member of the Board of Pharmacy to fill a vacancy caused by the resignation of Mr. Ambler. A ballot being had, Mr. Adolph Tscheppe, Ph.D., was elected. Mr. Tscheppe is one of the most scholarly and best educated pharmacists of the city, and will make a valuable member on the Board.

The Pharmaceutical Laboratory which has been planned by the college, but the fitting up of which had been delayed for various unavoidable reasons, will form an important subject for action at the next meeting of the Board of Trustees. It is hoped that plans will be matured at that time to speedily commence work upon it.

The Library of the college has been rearranged, and members and students will be able to consult the books and journals at certain specified times, under regulations which are posted up in a conspicuous place.

Alumni Association of the Massachusetts College of Pharmacy.—A meeting of the Association was held at the college rooms on the 25th of May, it being the first of a series of scientific meetings, to be held in connection with a social collation, and proved eminently successful. The collation was followed by an interesting discussion on the antiseptic properties of boro-glycerite; its manufacture, etc., and other interesting topics were also brought up for discussion. The following gentlemen were elected delegates to the American Pharmaceutical Association: Prof. B. F. Davenport, Prof. Geo. F. H. Markoe, Prof. Jas. F. Babcock, Wm. W. Bartlett, F. H. Butler, Geo. F. Dinsmore, Henry Canning, and Ed. S. Kelley.

Chilian Iodine.—Total export of iodine from Antofogasta for six months ending June 30th, 1881:

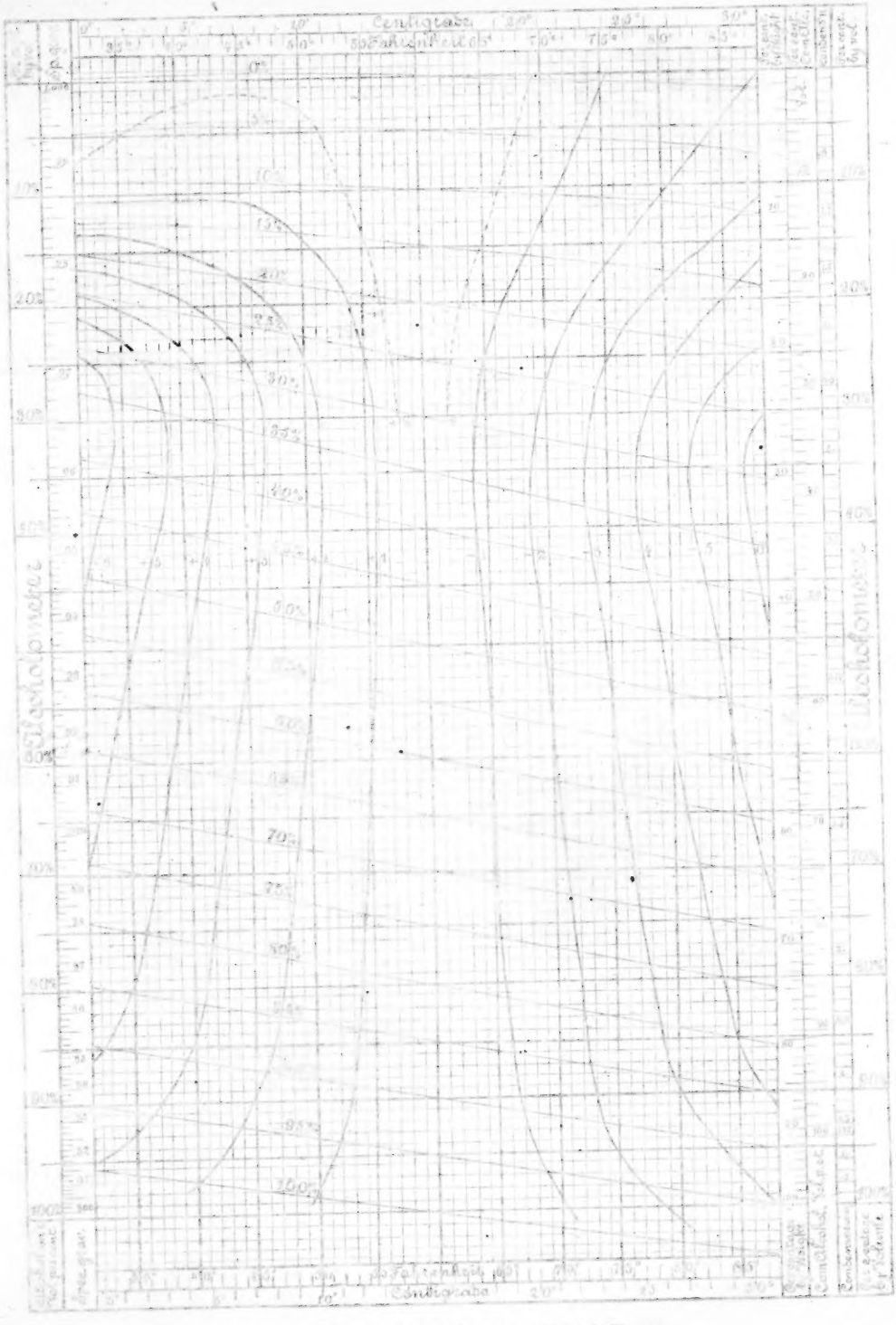
	Sp. Quintals.	Tons.
During the six months ending June 30th, 1881	801.38	36½
Iodine shipped in 1879	723.18	32¾
Iodine shipped in 1880	1,202.26	54½
Total exported	2,726.82	123¾

All shipments of iodine are made to England direct in British vessels.—Vice-consul Barnett, in Consular Reports.

PHARM. CALENDAR FOR JULY.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.

Date.	Society Meetings.
Mon. 3d.	Erie Co. Pharm. Asso.—Meeting at Buffalo.
	Pittsburg Coll. Pharm.—Quarterly Meet.
	National Coll. Pharm.—Meet.
Tues. 4th.	Philadelphia Coll. Pharm.—Trustees' M.
	Davenport (Iowa) Pharm. Assoc.—Quart. M.
	Maryland Coll. Pharm.—Trustees' M.
	St. Joseph (Missouri) Pharm. Assoc.—Meet.
Thurs. 6th.	New York Coll. Pharm.—Trustees' Meet.
	Massachusetts Coll. Pharm.—Trustees' M.
	Louisville Coll. Pharm.—Pharm. Meet.
Frid. 7th.	Cleveland Pharm. Assoc.—Meet.
	American Chem. Soc.—Meet. at New York.
Mon. 10th.	Rhode Island Pharm. Assoc.—Quart. Meet.
Tues. 11th.	Pittsburgh Coll. Pharm.—Trust. Meet.
	Chicago Coll. Pharm.—Trust. Meet.
	Kings Co. Pharmaceutical Soc.—Meeting at Brooklyn.
	National Coll. Pharm.—Meet. & Trustees' M.
Wed. 12th.	Board of Pharmacy, New York.—Meet.
Thurs. 13th.	Newark Pharm. Asso.—Meet.
	California Pharm. Soc. and College of Pharm.—Quarterly Meet.
	Louisville Coll. Pharm.—Direct. Meet.
	Philadelphia Coll. Pharm.—Alumni Ph. M.
	Maryland Coll. Pharm.—Semi-Annual Meet.
	New York German Apoth. Society.—Semi-Annual Meet.
Tues. 18th.	St. Louis Coll. Pharm.—Trust. Meet.
	St. Joseph (Missouri) Pharm. Assoc.—Meet.
Tues. 25th.	Boston Druggists' Assoc.—Meet.
Thurs. 27th.	Kings Co. Board of Pharm.—M. at Brooklyn.



ALCOHOLOMETRIC CHART.

By A. E. Lyons, M.D.

No. 1061.—Furniture Polish (Ohio).

The following mixture is much used:

Olive oil.....9 parts
Oil of amber, rectified.....9
Oil of turpentine.....9
Tincture of alkanet.....1 part.

Mix and keep in a well-stopped bottle. When using it, pour a little upon a piece of cotton, apply it lightly to the wood several times, and then rub it dry with a woolen rag. If the polish of the furniture has only faded, it will be entirely restored. Of course, if the surface has been rendered rough, or has been scratched, it must first be restored to its former smoothness.

No. 1062.—Oleate of Lead.

This is most readily prepared from the commercial *Am. Plasters Blended*, lead plaster or [illegible] plaster, which is a mixture composed chiefly of oleate and palmitate of lead. The oleate of lead is soluble in petroleum benzin, while the palmitate is not. If, therefore, digest a suitable quantity of lead-plaster with a sufficient quantity of benzin, the oleate will dissolve, leaving the palmitate behind. By decanting you will remove the oleate of lead. By evaporating the benzin solution you will have left the oleate of lead. The benzin used should have a specific gravity of 0.6 to 0.75 and should boil between 158° and 176° C. (316° to 349° F.).

In order to dissolve the lead-plaster in the benzin, use an upright [illegible] so as to make the condensed vapors run back into the flask. And instead of evaporating off the benzin, it may be distilled off by means of the same condenser, so arranged that the condensed benzin may collect in a receiver.

ITEMS.

American Pharmaceutical Association.—The members of this association are hereby notified that the thirtieth annual meeting of the association will be convened on Tuesday, September 12th, 1882, at 3 o'clock, at Niagara Falls, New York.

The time, the place, and the unusual attractions which will be afforded the visiting members, will, beyond any doubt, make this one of the largest gatherings the association has ever had.

The local secretary, Mr. Hiram E. Griffith, and the special committee on entertainment have perfected arrangements which will tend to the comfort and pleasure of visiting members, and which cannot fail to be an additional inducement to increase the attendance beyond previous years. These arrangements will be duly announced in a special circular to members early in August.

The objects of the association commend itself to the favorable consideration of every respectable pharmacist of our land, and it should have their hearty co-operation.

Its membership, now over 1,300, counts a large number of our best pharmacists, and it seeks the addition of good pharmacists to its membership, that they may enjoy its privileges and benefits.

Blank forms of application for membership will be forwarded to all persons who desire them, and who will write to either the president, the secretary, Prof. J. M. Maisch, Philadelphia, or G. W. Kennedy, Tarentum, Pa.

P. W. Bedford, *President*.

New York, June 20th, 1882.

College of Pharmacy of the City of New York.—A quarterly meeting of the college was held on Thursday, June 15th, at 8 P.M., at which the usual routine business was transacted.

On the same evening a special meeting was held to elect a member of the Board of Pharmacy to fill a vacancy caused by the resignation of Mr. Ambler. A ballot being had, Mr. Adolph Tscheppe, Ph.D., was elected. Mr. Tscheppe is one of the most scholarly and best educated pharmacists of the city, and will make a valuable member on the Board.

The Pharmaceutical Laboratory which has been planned by the college, but the fitting up of which had been delayed for various unavoidable reasons, will form an important subject for action at the next meeting of the Board of Trustees. It is hoped that plans will be matured at that time to speedily commence work upon it.

The Library of the college has been rearranged, and members and students will be able to consult the books and journals at certain specified times, under regulations which are posted up in a conspicuous place.

Alumni Association of the Massachusetts College of Pharmacy.—A meeting of the Association was held at the college rooms on the 25th of May, it being the first of a series of scientific meetings, to be held in connection with a social [illegible] and proved eminently successful. The [illegible] was followed by an interesting discussion on the [illegible] properties of boro-glycerite; its manufacture, etc., and other interesting topics were also brought up for discussion. The following gentlemen were elected delegates to the American Pharmaceutical Association: Prof. E. F. Davenport, Prof. Chas. T. H. Markoe, Prof. Jas. E. Babcock, Wm. W. Bridges, F. H. Butler, Geo. F. Pinkham, Ed. S. Kelley.

Chilean Iodine.—The U.S. report of iodine from Antofagasta for six months ending June 30th, 1881:

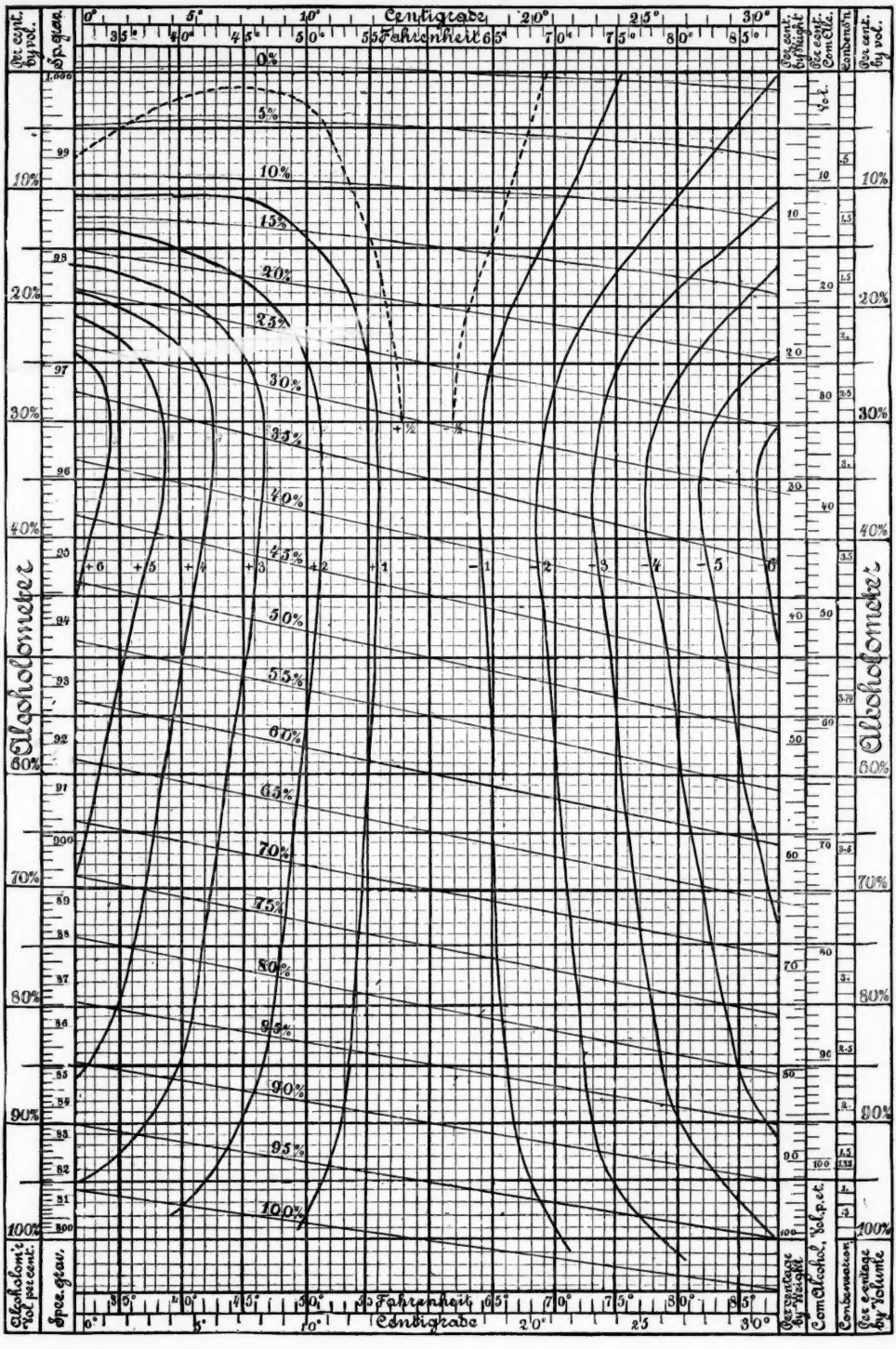
	Quintals.	Tons.
During the six months ending June 30th, 1881	891.38	36½
" " " " " 1880	923.16	37¾
Iodine shipped in the year ending June 30th, 1881	1,292.36	54½
Total exported	3,726.82	183¾

All shipments of iodine are made to England direct in British vessels.—Vice-Consul Barnett, in Consular Reports.

PHARM. CALENDAR FOR JULY.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.

Date	Societies' Meetings.
Mon. 3d.	Erie Co. Pharm. Asso.—Meeting at Buffalo. Pittsburg Coll. Pharm.—Quarterly Meet. National Coll. Pharm.—Meet.
Tues. 4th.	Philadelphia Coll. Pharm.—Trustees' M. Davenport (Iowa) Pharm. Assoc.—Quart. M. Maryland Coll. Pharm.—Trustees' M.
Thurs. 6th.	St. Joseph (Missouri) Pharm. Assoc.—Meet. New York Coll. Pharm.—Trustees' Meet. Massachusetts Coll. Pharm.—Trustees' M. Louisville Coll. Pharm.—Pharm. Meet.
Fri. 7th.	Cleveland Pharm. Assoc.—Meet.
Mon. 10th.	American Chem. Soc.—Meet. in New York.
Tues. 11th.	Rhode Island Pharm. Assoc.—Quart. Meet. Pittsburgh Coll. Pharm.—Trust. Meet.
Wed. 12th.	Chicago Coll. Pharm.—Trust. Meet.
Thurs. 13th.	Kings Co. Pharmaceutical Soc.—Meeting at Brooklyn. National Coll. Pharm.—Meet. & Trustees' M. Board of Pharmacy, New York.—Meet. Newark Pharm. Assoc.—Meet. California Pharm. Soc. and College of Pharm.—Quarterly Meet.
Tues. 18th.	Louisville Coll. Pharm.—Direct. Meet. Philadelphia Coll. Pharm.—Alumni Ph. M. Maryland Coll. Pharm.—Semi-Annual Meet. New York German Apoth. Society.—Semi-Annual Meet.
Wed. 19th.	St. Louis Coll. Pharm.—Trust. Meet.
Tues. 25th.	St. Joseph (Missouri) Pharm. Assoc.—Meet.
Thurs. 27th.	Boston Druggists' Assoc.—Meet. Kings Co. Board of Pharm.—M. at Brooklyn.



ALCOHOLOMETRIC CHART.

By A. B. LYONS, M.D.